MEKELLE UNIVERSITY

COLLEGE OF BUSINESS AND ECONOMICS

DEPARTMENT OF COOPERATIVE STUDIES

FACTORS INFLUENCING MARKETING MARGIN OF ARTISANAL GOLD MINERS OF MENGE WEREDA, BENISHANGUL GUMUOF Z REGION, ETHIOPIA

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A Thesis

Submitted in partial fulfillment of the requirement for Master of Art Degree

In

Cooperative Marketing

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MEKELLE

Declaration

This is to certify that this thesis entitled **"Factors Influencing Marketing Margin of Atisanal Gold Miners of Menge Woreda,"**, submitted in partial fulfilment of the requirements for the award of the degree of Master of Arts in Cooperative Marketing, to the College of Business and Economics, Mekelle University, through the Department of Cooperative studies, done by Mr. Tesfaye Asmare Birrle, Id. No. CDANR/PR0026/01, is an authentic work carried out by him under my guidance. The matter embodied in this project work has not been submitted earlier for award of any degree or diploma to the best of my knowledge and belief.

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DEDICATION

Artisanal miners are the key players of the development arena. But, this research found that they were in receipt of less attention. In order to attract researchers to deal with artisanal gold miners' multifaceted livelihood, this manuscript is dedicated to the development actors"***Artisanal Miners***"

LIST OF ACRONYMS

AGDE	Adola Gold Development Enterprise
AM	Artisanal Miner
BGRS	Benshangul Gumuz Regional State
CSA	Central Statistics Authority
CSA	Central Statistics Agency
FDI	Foreign Direct Investment
GMM	Gross Market Margin
GoE	Government of Ethiopia
HHHs	House Hold Heads
ILO	International Labor Organization
MDG_S	Millennium Development Goals
MEDaC	Ministry of Economic Development and Cooperation
MFIs	Micro Finance Institutions
MIS	Marketing Information System
MoD	Minerals Operation Development
MoME	Ministry of Mine and Energy
NMM	Net market Margin
NBE	National Bank of Ethiopia
SPSS	Statistical program for social science
OAU	Organization of Africa Unity
PASDEP	Plan for Accelerated and Sustainable Development to End Poverty
SACCO	Saving and Credit Cooperative
TGMM	Total Gross Market Margin
UNDP	United Nation Development Program
USD	United states of America Dollar
WOCCU	World Counsel of Cooperative Union

Table of Contents

Declaration ii
ACKNOWLEDGEMENT iii
DEDICATION v
LIST OF TABLES x
List of Figures xi
ABSTRACT xii
CHAPTER I 1
INTRODUCTION 1
1.1 Background 1
1.2. Statement of the problem 4
1.3 Objectives of the Study 7
1.3.1. General Objective 7
1.3.2. Specific Objective 7
1.4 Research Questions 8
1.5. Working Hypotheses 8
1.6. Scope and limitation of the study 8
1.7 Significance of the study 9
1.8 Organization of the Study 10
CHAPTER II 11
LITERATURE REVIEW 11
2.1. Definitions and concepts 11
2.2 Empirical studies 14
2.2 .1 The importance of Mining sector in Ethiopia 14
2.2.2 Establishing formal marketing systems 16
2.2.3 Empirical Studies of Marketing Cooperatives in Ethiopia 20
2.2.4 Access to credit and finance 24
2.2.5 Micro finance institutions in Ethiopia 28
2.2.6 Technical assistance programmes 30
2.2.8 Strategies/incentives to discourage illegal trading 33
2.2.9 Women in mining 33
2.2.10 Child labour 36

2.2. 11 Environmental management for small-scale mining 37
2.3 conceptual frame work 39
CHAPTER III 40
MATERIALS AND METHODS 40
3.1 Description of the study area 40
3.1.1 Administrative set-up 40
3.1.2 Population 41
3.1.3 Land 41
3.1.4 Meteorology 41
3.1.5 Metallic minerals occurrence/deposits of BGRS 42
3.1.6 Geo-chemical and Metallogenic belts 42
3.1.7 Study area 43
3.2.1 Sampling techniques 45
3.2.2 Methods of Data Collection 46
3.2.3 Methods of Data Analysis 46
3.2.3.3. Selection of the Econometric Model 49
3.2.4 Operational Definitions of the variables 52
CHAPTER IV 58
RESULT AND DISCUSSION 58
4.1 Result of Descriptive Statistics 58
4.1.1 Personal character 59
4.1.2 Marketing margin 69
4.2 Identification of the Important Factors influencing the marketing margin of Artisanal miners 73
4.3 The role of legal and institutional support 80
4.3.1. Institutions 81
4.3.2 Technical support 82
4.3.3 Laws and regulation 82
4.3.4 Licensing 83
CHAPTER V 84
CONCLUSION AND RECOMMENDATION 84

5.1. Conclusion 84
5.2. Recommendation 86
5.3. Implications for future research 90
REFERENCE 91
ANNEXURE 93

LIST OF TABLES

Table 1: Sampling process and sample size 45
Table:2 List of variables, their nature and measurement 57
Table 3: age group of artisanal miners in contrast to marketing margin gain by respondent . 60
Table 4: sex of Artisanal miners in contrast to marketing margin gain by respondent 61
Table 5: Family members participate in mining comparing with the beneficiation of Market ing margin 62
Table 6: Educational status of respondent * total gross marketing margin gain by respondent Cross tabulation 63
Table 7: production system by gross marketing margin 64
Table 8: Work experience by the marketing margin..... 65
Table 9: Time allocated to mining of gold by total marketing margin 66
Table 1 : Comparing Gold and Agriculture Income 68
Table 11: Market Price of gold on quarterly bases..... 70
Table 12: Miners sell their product quarterly and annual average 71
Table 13 T-test for continuous data 74
Table 14 Chi-square test for frequency differences of discrete variables..... 75
Table 15: Model Summary..... 76
Table 16: Parameter Estimate for Binary Logit (variable in the equation)..... 77
Table17: Market Channel Perception * total gross marketing margin gain by respondent... 80
Table 18: Support to Market Information..... 81
Table 19: Awareness of miners with different mining regulations 82

List of Figures

Page

Figure 1:	Conceptual frame work ……	44
Figure 2:	Map of the study area.....	46
Figure 3 :	Year 2009 – 2010 Gold Produced by Respondents……	72
Figure 4:	Year 2009 – 2010 Agricultural Production by Respondents……	73
Figure 5:	Market Channel of Menge Woreda ……	75

ABSTRACT

There is a paradox coming out of the operations of the mining industries in most developing countries. It was believed that the presence of minerals in a country would automatically lead to growth and improved welfare of the people. This has not happened and lead to the source of unhappiness or harm. Gold is one of the precious metals, and is found in substantial amount in most of the western part of Ethiopia particularly in Benishangul Gumuz region, Menge woreda. The main problem for this research emanates from the fact that the long years Artisanal gold miners effort to gold mining activities detained under long marketing chain, lowest amount of marketing margin for Artisanal gold miners and weak institutional support have contributed to the host of conflict and the mining industry has not improved the livelihood of miners.

This study was undertaken with the intention of addressing four main objectives: assessing the existing gold marketing channels, identifying socio-economic factors significantly affecting the marketing margin of artisanal gold miners, analyzing the role of legal and institutional framework for gold marketing, and suggesting possible strategies which influence better performance of Artisanal gold miners in the study area.

To this end, two stages random sampling method was employed to select the Woreda, kebeles and the sample size. Both primary and secondary data were collected for the study. Primary data sources were house hold heads of 130 Artisanal miners and 30 traders at different levels with the help of structured interview schedule. Focus group discussion was also conducted by using checklist. Secondary data were taken from different levels of mining and energy offices, Trading and Industry, Custom Agency, Central Statistics agency, National bank and Woreda Agriculture and Rural Development Office, Publication, Reports, Bulletin, and Wave pages.

Descriptive statistics and binary Logit model were the tools employed to analyze the data with the help of JMP 5, and SPSS version 16 statistical soft ware. The result of examining the existing market margin indicates that there are eight market chains. Within this chain (20%) of the total marketing margin, which is equivalent to 67.56 birr per gram of gold came into view. The identification of factors positively influence marketing margin of artisanal

miners were: credit facilities at (99%) confidence interval. Educational status, cooperation of miners, Agricultural production, marketing information, and saving culture also found positively affect the marketing margin of artisanal miners at 95% confidence interval. In consideration of legal and Institutional support, two mining tax and one newly developed transaction of precious minerals proclamation were declared, but 95% of the artisanal miners were not aware of it. The expected marketing information and technical support of different level of concerned government organization valid at 5.4%, and only 12% of 30 sample traders have license to purchase and sell gold product that production activities performed entirely without any license.

Hence, this implies, that there were long marketing channels, wide range of market margin, Weak financial position disorganized marketing activity of miners, weak institutional support, and limited capacity of government to control illegal market environment found to be a Sevier problems of the study area.

Therefore; it is recommended to launch direct market chain between miners and National Bank of Ethiopia, encouraging microfinance institution to open branch near by miners ,organizing valid and vibrant marketing cooperative and capacitate institutions to enable to give update market information ,research ,extension service.

The study result provide general information for decision makers, planers and other development stakeholders involved directly or indirectly in promoting mining. Besides, the important gold marketing channels were not well identified. Therefore, it is important that the supply potential with the major production constraints are documented in order to design appropriate intervention measures for the study segment in the area which can boost the role of artisanal miner's income and employment opportunity. Moreover, the study will hopefully serve as a springboard for further and detailed study in the region.

Key words

CHAPTER I

INTRODUCTION

1.1 Background

Gold appears to be the first metal known preferred and used by man. One reason why gold is so valued throughout the world is that it has got such an incredible history. From the ancient Egyptians to James Bond, from Homer's 'Odyssey' to the Californian gold rush, gold has played a fascinating part in world history and culture for thousands of years.

Gold occurs in nature as a highly pure metal and is treasured because of its colour, its extraordinary manageability and its resistance to corrosion. Gold is characterized by high density, high electrical and thermal conductivity. Besides its use for monetary reserves, it is also used in the private sector principally for investment and fabrication jewellery. In the electronics industry, gold is used as fine wires or thin firm coatings and frequently in the form of alloys to economize gold consumption and to impart properties such as hardness in dentistry, and also used for a variety of restorations. (w.w.w.goldpedia.gold.org)

The unique market characteristics of gold is considered to be a hedge against inflation, recession, and downturn in the general equity markets during the decline in the equity markets, gold is used as a safe haven. For example, in September 10, 2001, the day before the terrorist attack, was US$ 271.5 compared with US$ 292.5 per troy ounce on September 21, 2001, an increase of 7.45%. These historical data on the movements of stock and gold prices clearly indicate that during catastrophic events and economic uncertainty investors focus more attention towards gold. Gold has three crucial attributes that make it different from other assets:

(1) Assay (chemical analysis of substance) gold is homogeneous;

(2) Gold is durable and fungible (traded or substitute)

(3) The inventory of above-ground gold is very large compared to the changes in flow of demand.

The exploitation of minerals by artisanal method has occurred in Ethiopia over 4800 years, since around the time of old kingdom (3110-2258 B.C) of ancient Egypt where hieroglyphic records tell of commercial expedition to the region of the 'Land of Punt' to obtain gold and other mineral products. Mining continued through all the key periods of Ethiopian history from pre-Axsumite (1500-400B.C) times to the kingdom of Axum (1-700AD), the Middle Ages, the rise of Gonder through to more modern times.

Even though modern mining in Ethiopia is recent, gold has traditionally been mined from alluvial and, to a lesser extent, primary free gold since ancient times. However, modern gold mining began only in 1930s with the discovery of placer gold in Bedakesa Valley of Adola area, southern Ethiopia. Later on, modern investigation continued and resulted in the discovery of important deposits of gold, such as Legedembi, and other minerals

Small scale miners are often, but not always, legal operators usually working in collectives of about 2 to 20 or more people. They have greater structure and organization to their workings than perhaps artisanal miners and often make use of simple processing plants.

As a result of the political change that took place in 1991, a new economic policy has been introduced in the country. In the mining sector, the government has publicize a new Mining Proclamation and Mining Income Tax Proclamation to encourage the participation of private capital in mineral prospecting, exploration and development activities. The new Mining and Mining Income Tax proclamations were issued in June 1993. The Mining Regulations came

into effect in April 1994. The Mining Proclamation No.52/1993 and the Mining Income Tax Proclamation No. 53/1993 were amended in favour of investors in 1996.

Ethiopia produces various types of minerals such as gold, silver, gem-stones, soda ash, tantalum, kaolin, construction materials particularly colourful dimension stones, and mineral water. The contribution of the mineral sector to the **GDP** does not exceed **2%** owing to the low level development of the sub-sector from legally organized 28 associations. 668.91 Kg and 775.45 Kg of gold was brought to the national and international market in the year 2004 and in 2005, respectively. (Ministry of Mines, July 2007)

Artisanal Mining commonly provides the only means to obtaining income for many poor Ethiopians in remote rural areas who have few or non-farm livelihood alternatives. The AM sector does have the potential to automatically empowered disadvantaged and vulnerable group and contribute to the new Ethiopian five year plan for Accelerated and Sustainable Development to End Poverty (PASDEP). On a local level it can provide a means of survival and decent work for the miners and stimulated demand for locally produced goods, services and various type of infrastructure. In addition, if a mutually conducive environment was created for the formalization of the ASM sector the export of high value minerals and metals could make a significant contribution to foreign exchange earnings and tax revenues for the government of Ethiopia (GoE), encourage foreign direct investment (FDI) and help work towards Ethiopia's commitment to the internationally accepted Millennium Development Goals (MDGs).

To accomplish this national target, there are a number of obstacles along the road, among these problems, the long marketing channel, wide market margin between the producer /Artisanal Miners/and the final user were found to be indications of unhealthy market. This condition brings no considerable change observed in the livelihood of the vast and greater

part of artisanal miners. Therefore, the researcher was interested to investigate why this problem is created and how it can be solved in order to achieve the national target and improve the livelihood of Artisanal miners.

1.2. Statement of the problem

Marketing has often been considered as unproductive or as an activity of exploitation, principally when differences between the producer price and the consumer price are significant. The main reason to this notion is related to a fundamental question of economic science, which is distribution structure will allocate products and services in the society most efficiently; getting the right price is a major objective (Killick, 1989).

Various factors can give rise to inefficiencies to a marketing system. These factors may originate in technical barriers including lack of market information, structural elements, government programs and policies. Miners in Ethiopia in general are affected by low producer's price, on the one hand and high consumer price conversely. In addition, most miners are not in a position to take advantage of seasonal price differences because of limited income to cover their financial commitments.

In Ethiopia, the performance of mining market system is constrained by many factors such as: The presence of too many intermediaries, lack of vertical and horizontal coordination, lack of integration of miners to the marketing system, lack of market facilities, weak extension services which ignored marketing development, poor linkage of research and extension, absence of marketing information and intelligent services, limited access to credit, inefficient handling including storage and transportation problems. Furthermore, weak legal system to enforce contracts, lack of institutions to study, evaluate, plan and implement market

development, inadequate government interventions, absence of market regulations and legislations are some of the core problems to be mentioned.

Artisanal mining means unless otherwise specified by ministerial directive non- mechanized mining (<15m vertical depth (Article 2.2 52/93) and mercury is not allowed (Article 26.6 182/94) operations of gold, platinum, precious minerals, metals, salt, clay, and other similar minerals, essentially manual in nature, carried out by Ethiopian individuals or group of such person. According to article 95(2) (52/93) possession of financial resources, technical competence, professional skill and experience are not required to acquire an artisanal mining license.

There are three types of extracting of Gold by artisanal miners, the first one is digging deep pits carrying soil out and panning to wash the soil. The second one is following the river basin and takes silt soil and panning it to wash; the third one is breaking rocks, crashing manually and separating the gold.

If one is to choose a single development activity that cuts across all the major challenges presented by the Millennium Development Goals (MDGs), what would that activity be?

a) Infrastructure development

b) Climate change mitigation and adaptation

c) Governance avoiding corruption

d) Artisanal and small-scale mining

e) All of the above

All of the above is perhaps a brave and tempting guess. But, if one want to be more precise, then his answer will probably be d). Simply put, the social and economic characteristics of small-scale mining fully reflect the challenges of the Millennium Development Goals (MDGs), including: health, environment, gender, education, child labor, and poverty eradication. With regard to gender and child labor, as many as 650,000 women in 12 of the world's poorest countries are engaged in Artisan mining, and between 1 and 1.5 million children, evenly split between boys and girls, are also involved in this activity worldwide. When we take health issues under consideration, small-scale mining communities are highly vulnerable to communicable diseases including malaria, tuberculosis, influenza, cholera, yellow fever, sexually transmitted diseases, and HIV/AIDS.

In general, Artisanal mining operation in the country is characterized as being unproductive, uncontrolled, uneconomical, lacking occupational safety, unhealthy and polluting, and the construction of informal villages with little or no basic services which are exposed to transmit disease. Diggings carried out with no knowledge, and no technical support is prevalent among the miners. These all are some of the production aspects of the problems. Also the marketing aspects of the problem are very much complicated due to social, economical legal and technical cases.

On the contrary, countries like Tanzania made a profound change in their policy by encouraging the Artisanal miners. Nowadays, the sector is booming and contributing a great deal to the national economy second to coffee. China use this sector as a strategy to the purpose of controlling the rural mass from being immigrant to the city, also one of the larger means of job opportunity, and supporting to agricultural income. *Half of the world Artisanal miners are living in China*.

Hence, this study critically examines the effect of market channels on the livelihood of artisanal miners, the role of marketing agents, how lower level price decide, marketing margins, legal and institutional support to Artisanal gold miners and market infrastructure. Generally, the study will critically evaluate the elements of market structure, conduct and performance of artisanal miners.

Even if, there is lack of pertinent research studying the marketing margin of the artisanal miners in the study area and to identify and analyze the factors affecting them, the present study is an attempt towards analyzing the factors affecting the marketing channel of the artisanal miners in the study area and aims to bridge the prevailing information gap on the contextual factors and forward possible solution.

1.3 Objectives of the Study

1.3.1. General Objective

The main objective of this research work is to study "The Factors Influencing marketing margin of Artisanal Gold miners of Menge Woreda, Benishangul Gumuz region Ethiopia,

1.3.2. Specific Objective

The specific Objectives of this study are:

1. To assess the existing gold marketing channels of Menge Woreda,
2. To identify socio-economic factors significantly affecting the marketing margin of artisanal gold miners,
3. To analyse the role of legal and institutional framework for gold marketing in Menge Woreda, and

4. To suggest possible strategies which influence better performance of Artisanal gold miners.

1.4 Research Questions

Attempts have been made to answer the following questions.

- What are the existing gold marketing channels in Menge Woreda?
- What are the socio-economic factors that affect the gold marketing margin in the Woreda?
- What are the legal and institutional limitations of gold marketing channels in the Woreda?
- What possible strategies can be designed to favour the Artisanal gold miners?

1.5. Working Hypotheses

- There is no significant relation between marketing channels and the marketing margin of Artisanal miners.
- Socio-economic factors like, education, saving , credit, have no significant effect over the marketing margin
- Legal and institutional factors like, license, law, government support, and information limitation have no significant effect on the marketing margin.

1.6. Scope and limitation of the study

The study has certain limitations, which emanate primarily from shortage of time, budget, and facilities. In the first place, the study covers only one woreda, Menge, of the 3 zones, and 20 woredas of the Benishangul-Gumuz region. Secondly, the study area is so remote that it create unease to collect data and aggravated by the poor culture of community to share information. Previously conducted studies focuses only on the exploration of the minerals in the region, therefore, lack of related literature is also a problem to the study. In addition to

these, respondent artisanal gold miners were very doubtful to offer some important data for the analysis, for instance gold yield and income as it is considered as expression of wealth. Thus, these limitations may adversely affect the strength of the results.

1.7 Significance of the study

Concerning the natural resource of Benishangul Gumuz region, some geological surveys were conducted earlier which contribute a lot to the natural resource development and to this research. Important geo-chemical belts, which can help for further exploitations are defined in the region mainly after the regional geo-chemical works of three major projects. These projects are: The UNDP project, Guba Oda Integrated Mineral Exploration Project and ETHIONOR Beles - Dinder Gold and Base Metals Exploration Project of GSE. The Bure Abergele project of GSE also conducted a regional exploration in the Benishangul - Gumuz and the Amhara National Regional State and defined geo-chemical gold by pan concentrate samples in the eastern part of the BGRS.

However, the previous studies were focused on the exploration to find out the place, the type of minerals, and how to develop it. And also mainly focused on the large scale mining purpose, to the knowledge of the researcher ,no one of these studies give attention to the Artisanal miners and the marketing sectors, but the contribution of these studies to this research will be worth mentioning.

This research gives attention on the Artisanal gold miners who comprise 10% of the total population in Benishangul Gumuz region. The sector is the largest job opportunity second to agriculture and the main support to the deficit of agricultural production. The main argument to the study is, though long existence of mining job in Menge Woreda, there has no significant effect observed in the life of Artisanal miners so far. Then analyzing factors

affecting artisanal miners keeping them out from getting their sweat and give possible solution to it.

Therefore, critical analysis of gold marketing chains is very important before launching and implementing marketing development issues. Hence, the study will give detailed information on how gold-marketing chain is functioning, predominantly in the domestic market center of attention on Menge Woreda, which is one of the major gold mining areas in the region.

The study result may provide also general information for decision makers, planers, and other development stakeholders involved directly or indirectly in promoting mining. Besides, the important gold marketing channels were not well identified, therefore, it is important that the supply potential with the major production constraints are documented in order to design appropriate intervention measures for the study segment in the area which can boost the role of artisanal miner's income and employment opportunity. Moreover, the study will hopefully serve as a springboard for further and detailed study in the region.

1.8 Organization of the Study

The introductory part of the study has been discussed in the previous sections. The rest of the paper is organized as follows: the second part presents the Literature review. The third part presents and discusses the methodology of the study. The fourth part dwells on results and discussion of the study. The final part documents the conclusion and summary as well as policy recommendations and possible indications for future research.

CHAPTER II

LITERATURE REVIEW

2.1. Definitions and concepts

Artisanal mining

Artisanal mining is small scale miners are often, but not always, legal operators usually working in collectives of about 2 to 20 or more people. They have greater structure and organization to their workings than perhaps artisanal miners and often make use of rudimentary processing plants. Artisanal mining means, unless otherwise, specially by ministerial directive non- mechanized mining (<15m vertical depth (Article 2.2 52/93) and mercury is not allowed (Article 26.6 182/94) operations of gold, platinum, precious minerals, salt, clay, and other similar minerals essentially manual in nature, carried out by Ethiopian individuals or group of such person. According to article 95(2) (52/93), possession of financial resources, technical competence, professional skill and experience are not required to acquire an artisanal mining.

Marketing channels

Marketing channels are sets of interdependent organizations involved in the process of making a product or services available for use or consumption. Marketing channel decisions are among the most critical decisions facing management (Kotler, 2003). The sequence of intermediaries and markets through which goods pass from producer to consumer is known as marketing channel (Kohl and Uhl, 1985). The complex pattern of marketing channels and the part played by each in the total market movement can be shown best in flow charts (Abbott, 1958). The importance of the distribution function in marketing is apparent when one considers the magnitude of goods and services that are transported and sold at millions

of locations through out the world. Many experts believe that the distribution decision is the most important marketing decision a company can make. The design of an organization's distribution system is a key factor in creating customer value and in differentiating one company's offering from that of another (Anderson and Vincze, 2000). As Anderson and Vincze (2000) noted, the field of distribution is made up to two distinct branches: channels of distribution and physical distribution. Channels of distribution consist of a network of intermediaries that manage a flow of goods and service from the producer to the final consumer. The success of this network depends on relationships among manufactures (producers), wholesalers, retailers, sales representatives, and others. As products move from one intermediary to the next, exchange takes place-exchange of physical goods, intangible services, and value added dimensions. Physical distribution activities include the actual movement of goods and services (i.e., logistics), with a focus on transporting and warehousing them. A number of well tried and tested channels have been used throughout generations by farmers, and the most important of these will be considered from the point of view of their use for particular commodities, and their individual advantages and disadvantages (Barker, 1989). There are two particular marketing channels through which farmers dispose of their output. They are marketing channels used by farmers acting independently and in unison.

Marketing margin

A common means of measuring market efficiency is to examine marketing margins. This is an attempt to evaluate economic or price efficiency**.** The overall marketing margin is simply the difference between the farm-gate price and the price received on retail sale. That difference can then be considered to be the cost of marketing and all that is entailed in getting the product from the producer to the consumer in the desired form. The question to

be evaluated is whether the marketing services being provided are "worth" the cost of this margin.

A marketing margin is the difference between the primary and derived demand curves. Primary demand is based on consumer preferences and their response to retail prices. Derived demand is based on the relationship between price and quantity at the farm gate or intermediate points.

Derived demand can thus be thought of as consumer demand as experienced by producers or other intermediaries. Primary and derived supply curves are analogous. The retail price is established where the primary demand curve and the derived supply curve intersect. The farm-gate price, on the other hand, occurs at the point where derived demand and primary supply curves intersect.

There are several types of marketing margins, based on the market level being considered. The wholesale margin is the difference between the price paid by the wholesale trader (or the processor) and the farm-gate or producer price.

- The retail margin is the difference between the price the retail trader pays and the retail price he charges to consumers.
- When the margin is expressed in monetary terms, it is called the price spread.
- When the margin is expressed as a percentage, it is known as the percentage margin.
- The mark-up is the price spread between two levels in the market divided by the selling price, expressed as a per cent.

In an efficiently operating market, the competitive environment should keep the marketing margin to a minimum. Market prices should then reflect two elements: the actual costs of marketing plus normal profit margin. A normal profit is one which provides returns to

investment comparable to available rates of interest plus some compensation for the risk borne by the marketer.

2.2 Empirical studies

2.2 .1 The importance of Mining sector in Ethiopia

Economic benefits

Generally the mining sector in Ethiopia generates revenue from sales, taxes,royality as well as generates foreign currency earnings and also saving of hard currency in substituting the imported mineral related inputs of the country. The mining service sector activities are also contributing for employment opportunity.

In Ethiopia, over 80% of the population is engaged on Agriculture and related activities. The major export of the country also comes from the Agricultural sector. Even though the country is believed to have wide mineral potential, the contribution of the mining sector to the national economy has so far reached a maximum of 6%.

The federal government has been collecting Royalty amount 48.5 Million Birr (4.4 Million USD) from the large scale production of gold every year for the last three years. The regional administration also collects Royalty from the small scale and artisanal production of precious minerals, industrial and construction materials. The total amount of Royalty collected by each region (nine regional states and two cities Administration) is in few tens of millions of Birr (up to three million US dollars).

The amount of foreign currency earning is About 135 Million dollars every year for the last recent years from the sales of export of minerals such as gold, tantalite concentrate platinum, decorative dimension stones and gemstones. This export earning contributes up to 7-10 % of the total export foreign currency earnings of the country.

According to information from the Ministry of finance and Economic development the contribution of the mining sector to the GDP before 1990's was less than one percent; however, there is statistical worked out data from this ministry that the mining sector contributed 5.8% and 5.5% during the fiscal year 2007/8 and 2008/2009, respectively. (Ministry of Mines, 2009)

The unique market characteristics of Gold is considered to be a hedge against inflation, recession, and downturn in the general equity markets during the decline in the equity markets, gold is used as a safe haven. For example, in September 10, 2001, the day before the terrorist attack, was US$ 271.5 compared with US$ 292.5 per troy ounce on September 21, 2001, an increase of 7.45%. These historical data on the movements of stock and gold prices clearly indicate that during catastrophic events and economic uncertainty investors focus more attention towards gold. Gold has three crucial attributes that make it different from other assets:

(1) Assay gold is homogeneous;

(2) Gold is durable and fungible;

(3) The inventory of above-ground gold is very large compared to the changes in flow of demand. A reporter in the Financial Times described the situation as follows: The metal is reassuringly tangible; it tends to be a good hedge against inflation; it tends to move in the opposite direction to shares and bonds; and unlike most financial assets, it does not represent anyone else's liability. Moreover, several analysts have upgraded their predictions of where prices are headed. (w.w.w.goldpedia.gold.org)

Social Benefits

Mineral sector employment opportunity is becoming significant for the local communities where there are mineral development activities in their near by areas, as well as for skilled

and semi skilled citizens. The total estimated direct employment of skilled and unskilled human resource in the mineral sector is in hundreds of thousands of people of the country. This employment record is revealed in construction and industrial minerals quarries, open pit and underground gold mine, production of salts from brines and rock salts and the gemstone mining that the distribution of such activities are found all over the country. The formal artisanal mining activity also reduces the poverty level of millions daily life including 30 to 40 percent of the women participation.Roads, electric power from national grid and telecommunication infrastructures have been developed and/or upgraded due to the development of Gold, tantalum, salt and other major mining projects in different parts of the country.

Different level of health service centres, schools as well as airstrips were built by the developers of the mine that provides service to the local community as well as the employees of the mining community. To some extent there is start to train local communities to engage in other form of business such as plantation of coffee and other trees, introducing agricultural activities (irrigation) where there had no such type of lifestyle in the area, small entrepreneurs engagement mainly providing services such as hotel, mini- markets, stationeries, etc to the

Community, etc. (Ministry of Mines, 2009)

2.2.2 Establishing formal marketing systems

These strategies aim at ensuring the growth of both local and export markets, by:

(a) Simplifying licensing procedures for dealers and traders and rationalizing and streamlining fiscal terms;

(b) Providing extension services and instituting stiff penalties on mineral smugglers;

(c) Facilitating establishment of competitive mineral markets close to mining areas that are operated by the major stakeholders;

(d) Establishing a system of local marketing committees that will ensure smooth and efficient operations of the mineral markets and keep statistics;

(e) Facilitating access to up-to-date minerals markets information;

(f) Offering incentives to encourage export promotion activities;

(g) Promoting formal financing schemes and direct sales to foreign buyers; and

(h) Utilizing the country foreign missions to identify markets, link them to dealers and initiate. (Economic Commission for Africa,2002)

Minerals marketing

Small-scale miners have many difficulties in finding adequate markets for their minerals. The proliferation of parallel markets, especially in high-value minerals, is testimony that there are problems with existing formal minerals-marketing arrangements. A number of measures have been taken by different countries to address the problem. Best practices in small-scale minerals marketing have been identified in Tanzania and Ghana.

Regulation on minerals marketing by a Central Government - Tanzania:

In Tanzania, the Minerals Resources Division of the Ministry of Energy and Minerals regulates the marketing of minerals. The Division has three departments, namely, Mining, Minerals Development and Geological Survey. The Mining Department is responsible for the regulation of minerals marketing. It has a network of 11 regional or zonal and 12 district offices located strategically in the major mining centres of the country. The department has a section of minerals marketing that is located at the headquarters in Dar-es-Salaam and is responsible for monitoring and keeping records of minerals marketing through liaise with the regional and district offices. People who actually do the monitoring and data collection are the officers It is required by law that all licensed mineral dealers, brokers and mineral rights

in charge of the zonal and district offices who are also inspectors within their jurisdictions. Owners submit returns indicating, among other things, data on minerals bought brokers and dealers) and sold. Authorised officers can inspect these purchase and sales records without prior notice. Licence applications for mineral dealerships are made to the Minister, although the office of the Commissioner for Mineral Resources is responsible for processing the applications. As part of the procedure, the Commissioner instructs the mine's officer in charge of the area to assess the adequacy of the applicant's facilities for conducting minerals dealership business. These include adequate office, location, mineral storage facilities and other considerations. These conditions apply only to large operators (Dealer and Master Dealer Licence) and not to Brokers Licences. Upon receipt of a report from the mine's officer, the Commissioner makes a recommendation to the Minister for issuance or refusal of the licence.

According to the mining legislation, foreign dealers and mineral buyers are not allowed to go to SSM areas to do their business. They can only operate from district and regional centres. In order to ensure that this does not deny small scale miners access to potential buyers/dealers, brokers were introduced to serve as a bridge between the two. However, miners are allowed to go to the district and regional centres to sell their products directly to foreign dealers.

Regulation on minerals marketing by a parastatal - Ghana: Ghana enacted the "Precious Minerals Marketing Corporation Law, 1989", that established a parastatal organization, the Precious Minerals Marketing Corporation (PMMC). PMMC oversees, regulates and participates in the marketing of precious minerals. It deals mainly with the marketing of gold and diamonds. The corporation issues buying licenses to both foreign and local companies to buy diamonds directly from the miners. It supervises the purchases and arranges all the necessary documentation for export, when the licensed buying company is ready to do so. The only requirement for a company to be licensed is that all purchases must be pre-financed

through the Bank of Ghana and the buyer has to pay an annual Licence Fee of $ US 10,000. The cost of the services offered by PMMC is 2% of the total value of rough diamonds exported at any given time. For gold, the corporation operates through a main buying centre in Accra, a branch buying office in Tarkwa and an Agency Office in Kumasi. In addition,the corporation licenses local agents and sub-agents to buy gold from small-scale miners all over the country and sell it to more established agents or at any of its branches. The corporation sends all the gold bought through its offices to an assay laboratory, which is responsible for weighing and analysing the gold to evaluate its purity, upon which payment is made. It takes about thirty minutes for the agent or customer to collect his cash/cheque. Customers cash their cheques in a bank located within the corporation's building.

Private minerals dealers - Tanzania:

The Tanzanian minerals market is one of the most open and competitive in Africa. The Mining Act (1998) and the associated regulations require that private dealers be licensed to carry out the business of minerals trading. The Government does not participate directly in any form of mineral trading and its role is limited to regulation, promotion, facilitation and provision of support services. There are 3 types of licensed mineral dealers, namely:

Mineral rights holders: All holders of mineral rights are allowed by law to sell (locally or export) their commodities without requiring an additional licence. This applies equally to small and large-scale producers.

Dealers: These are licensed to deal in gold, gemstones or any other mineral as approved by the Minister for Energy and Mines. Dealers' licences can only be issued to persons who can also meet the requirements for holders of a smallscale mining licence (Primary Mining License). As such, dealers' licenses are limited to Tanzanians only and are issued for renewable periods of 18 months.

Brokers: Unlike a dealers' licence, which must be issued by the Minister, the Commissioner for Mineral Resources issues Brokers Licenses? These authorize the holder to deal in raw gold and gemstones. Brokers buy and sell gold locally and the license does not entitle one to export minerals. Brokers' Licenses are issued to Tanzanians and are valid only for 15 months, on a renewable basis.

Private Dealers and Government Agency - Ghana：

In Ghana, the law allows minerals to be traded through PMMC and private dealers. The small-scale gold mining law of 1989 allows the Minister in consultation with the Minerals Commission to provide licence to any person he may consider fit, to buy and deal in any type and form of gold. On the other hand, PMMC buys gold from licensed agents who get their supplies directly from the small-scale miners. Miners can also sell their gold directly to PMMC through its branches. (Economic Commission for Africa,2002)

2.2.3 Empirical Studies of Marketing Cooperatives in Ethiopia

The cooperative movement is significant both in terms of membership and impact. The United Nations estimated in 1994 that the livelihoods of nearly 3 billion people, or half of the world's population, were made secure by cooperative enterprises. Nearly 800 million individuals are members of cooperatives. They provide an estimated 100 million jobs. They are economically significant in a large number of countries providing foodstuffs, financial services as well as the provision of services to consumers (ILO, 2005). Cooperatives have created over 13.8 million jobs in India, with 92 per cent of the jobs created through self-employment in the workers' cooperatives. In Japan, the consumer cooperative movement provided 58,281 full-time and 95,374 part-time jobs in 1997 (ICA, 2005).

However, as of the ICA's survey report in 2005, cooperatives, like other enterprises have seen their operations significantly affected by external challenges in the political and economic environment. Despite these, the cooperative movement is promising to a growing

potential for cooperative development, and for cooperative renewal, in light of the limitations of the free market in regard to social responsibility and equity, the advantages of decentralization of power, the importance of stakeholder and community involvement in economic and social life, and the growing role of the civil society (ICA, 2005).

Variety of services in Ethiopia: including input supply management; grain marketing; and the supply of consumer goods to members at prices that compete with local traders. Some Cooperatives were also involved in grain milling, seed multiplication and distribution, veterinary medicine distribution, and technical skills development. Farmer Cooperatives have also found.

The information that cooperatives and farmers get, in particular, did not assist them in deciding what cereals to supply and how much. There was practically no market extension service in the system that guides cooperatives and farmers in their supply, storage and marketing decisions. As Bureau of Agricultural and Rural Development (2006) stated that cooperatives provide a wide a clear niche in the production of high value export Cereals and the packaging and distribution of Fertilizer.

Baker G.A (2002) explains that the Agricultural outputs producers participated in the marketing system individually and collectively through cooperatives and some other type of producer marketing organizations. The objective of these organizations was to use collective forward integration into processing and marketing to achieve market power for their members. Among the major goals that cooperatives achieved in Ethiopia were:

- Provided information and education to their members to enhance their own business Management
- Improved bargaining power in purchasing farm supplies and selling farm products
- Obtained products and services which, were costly and available
- Improved product and service quality in both farm inputs purchased and commodities

Marketed;

- Reduced costs of marketing farm products
- Increased farmers' income.

marketing cooperatives were offered great collaboration to their members such as helping them to achieve economies of scale in production, marketing activities, coordinating production, and processing activities to meet final consumer demands, provided competition in contract markets by setting contract payment rates and other terms, and they captured profits from other stages in the market channel.

Ngezi Small-scale Miners' Cooperative - Zimbabwe:

Zimbabwe has about 100 registered mining cooperatives with a total membership between 4000 – 5000 miners. Although most have performed poorly due to lack of management skills,others like the Ngezi Small-scale Miners' Cooperative have done well. About 100 miners, former employees of a chromite company that went out of business, established the Ngezi cooperative. The cooperative applied and acquired mining claims and started extracting the ore through pig-rooting mining methods. Slowly, the group advanced to a stage where they were able to acquire equipment like compressors, percussion drills, a portable explosives magazine and a large articulated vehicle and trailer. Having acquired the claims over an area originally owned by their former employees, the cooperative benefited from the infrastructure that was left behind which included a school, clinic, running water, ablution blocks, mine road network and a large number of thatched huts. With the help of the Mining Department, the cooperative secured a loan of Z $ 15,000 from the Zimbabwe Mining Development Corporation to develop a small-scale formal underground chromite mine. Advisory and extension services were provided by the Mining Department.

Having secured a market with smelting companies (Union Carbide), the cooperative started a monthly production of about 200 tons of clean, high-quality chrome, 16 months after commencement of operations. Ten members of the cooperative were trained in most of the underground mining operations during the mine construction phase. The success story of the Ngezi cooperative attracted more people to chrome mining and nearly 2000 people are now involved in the production of chrome in Gweru and Kwekwe. The chrome is sold to Anglo American and Union Carbide, respectively.

Small-scale miners' organizations

Small-scale miners associations, unions and cooperatives can be effective as lobby groups, giving voice and representation to miners when dealing with the Government and handling issues of mutual interest, e.g., security, training, mobilizing infrastructural support and other socio-economic issues. The provision of assistance to the sector can be easily mobilized through the miners' organizations rather than through individual groups. However, lack of trust in leaders, coupled with poor financial resources and lack of managerial skills, make most small-scale miners associations ineffective. There are a few good examples of effective associations that are contributing to the development of the sector. These include:

The National Miners' Association - Zimbabwe: The National Miners' Association (formerly The Small-Scale Miners Association of Zimbabwe), has a membership of 5000 miners (Svotwa, 2000) which is less than 2% of the total estimated number of small-scale miners in Zimbabwe (350,000). Despite the small membership, the association has been very active in mobilizing and conducting activities aimed at benefiting its members and industry as a whole. The main contributions of this association include its participation in the development of the Shamva Mining Centre. The association is the official owner of the centre and oversees the management of its operations. In addition, it has been able to mobilize and organize training programmes for its members and beyond. A good example is the training

programme, which was organized in 1991 in collaboration with the Zimbabwe Geological Survey Department and funded by DFID. A more recent example of the effectiveness of the association was the mobilization of funding from GTZ for the Insiza gold panners project, which provides training, demonstrates the use of efficient technology and advises on the rehabilitation of mined areas. (Economic Commission for Africa,2002)

2.2.4 Access to credit and finance

In an ILO survey in 1999, small-scale miners identified access to credit as a major obstacle to successful development of the sector. The following are some good examples of programmes initiated to address the problem:

Loan-based financing schemes This category includes funds that can be accessed through loans from special Government schemes, financial institutions, and other lending institutions.

Government supported loan schemes - Zimbabwe： The Government of Zimbabwe has, over the years, implemented a number of support programmes aimed at promoting the development of the SSM sector. Some of these support programmes include loan financial schemes as detailed below (Svotwa, 2000):

Loans to purchase mines： Immediately after independence, the white owners, who did not trust the new regime and decided to emigrate to South Africa and other countries, closed a number of small-scale formal mines. The new Government provided loans limited to $Z25, 000 each, exclusive of the cost of plant and machinery at the mine, to enable new owners to purchase the mines. Repayment was over five years with a fixed interest rate of 9% per annum.

Loans to develop mines: This is aimed at developing new mining projects and covers costs for sinking of shafts, and raising or developing a reef. This loan can be written off if the work fails to expose workable ore. Loans to set up extractive plants: This loan also provides

assistance to new mining projects through provision of cash to cover up to 6 months operating costs with the aim of bringing the mine into profitable production.

Out-of-hand emergency loans: This is a loan of up to $Z4, 000 (nominal terms) that is made available by the District Advisory (Mining) Board and is repayable within one year. It is aimed at addressing any emergency that can bring a mining project to a halt.

Mining Industry Loan Fund (MILF) - Zimbabwe: The Zimbabwe Ministry of Mines,Environment and Tourism created the Mining Industry Loan Fund (MILF) in order to assist small-scale miners, (Drechsler, 2001). The fund, which is administered by the Mining Affairs Board (MAB), amounts to around $Z 2 million a year.

The establishment of a large number of small-scale formal mines in Zimbabwe is credited to these financial schemes, as well as to the overall assistance offered through hire/purchase schemes and extension services. Although most of these schemes are currently not operational due to the economic difficulties affecting the country, they nevertheless represented best practices in addressing the issue of shortage of finance by small-scale miners.

The Fundo de Fomento Mineiro (FFM) - Mozambique (Drechsler, 2001)：

The FFM is a mining development fund set up by the Government of Mozambique to help small-scale miners gain access to finance. Applications for funds have to be made to the president of the FFM, with details of the project attached and the intended usage of the funds. For example, if the funds are required for the purchase of equipment, price quotations from the suppliers must be attached. In addition, the following is also required:

(a) Copy of the mining licence;

(b) Feasibility study of the project;

(c) Proof of availability of a collateral representing 20% of the amount requested;

(d) Guarantees in properties equivalent to the requested amount (mortgage);

(e) Plan of payback of the credit; and

(f) Proof of market for the product to be mined.

Financing by the National Steering Committee of Service Providers (NSC) - South Africa: Under the South African framework for SSM development,The NSC is responsible for provision of technical, managerial and financial support to selected small-scale mining projects. Two departments of the Ministry of Trade and Industry, which are members of the committee, provide financial assistance, (i.e., Khula - which provides loans and Ntsika-which provides services in kind such as training and capacity building). Another member of the committee, the Industrial Development Corporation (IDC), provides commercial bank loans. Once a pilot project has been identified, a business plan is prepared and then submitted to IDC for evaluation. If approved, IDC grants 90% of the loan and the project promoters (usually in the form of a co-operative) are responsible for raising the remaining 10%. A number of projects across the country have already benefited from this arrangement.

Equity-based financial schemes

This group includes financing that can be accessed through joint venture partnerships, venture capital funds, investment banks, unit trust or mutual funds, stock exchanges and others risk sharing schemes. These funds impose similar conditions to those demanded by commercial banks for a bankable project. Such conditionalities make access to these funds by small-scale miners difficult. However,there are a few instances where small-scale miners have been able to access these funds successfully. These include:

Joint ventures - The Mwaca Amethyst Project - Zambia (SADC, 1999): The Amethyst Project is located in the Mapatizya area in Kalomo, Zambia. In order to fund the project, the project promoters approached HIFAB International, aSwedish donor agency. HIFAB agreed to give the project a loan on condition that they agree to go into joint venture with a Swedish partner. On establishment of a joint venture company with 50/50 equity split between the two

partners, a loan of $ US 50,000 was advanced to the Zambian registered company and the Swedish partner raised equity capital of the same amount.

The company then employed a qualified gemmologist and embarked on a vigorous campaign of finding markets for their amethyst production. This has resulted in the establishment of business relationships with amethyst buyers in Tucson, Arizona (USA), Jaipur in India, South Africa and Hong Kong. The company is now struggling to meet the high market demand that has emerged for their products, which now include the Zebra Amethyst (highly marketable in Hong Kong). The project is currently seeking additional funding to purchase equipment that will enable them to meet the new market demands.

Equity sharing - The Zinc Tailings Recovery Project - Sable Zinc Kabwe Ltd., Zambia (SADC, 1999): Some 15 ex-miners of the defunct Kabwe Division of the Zambia Consolidated Copper Mines Ltd. formed a company named Kabwe Power and Metals Ltd. (KPM), and acquired 6 million tons of tailings rich in zinc and lead. In addition, the company acquired metallurgical plants consisting of a concentrator; leach plant, waelz kilns, a char plant and offices. KPM consulted the Commonwealth Development Corporation (CDC) venture capital subsidiary for financing.

A joint venture company, Sable Zinc Kabwe Ltd. (SZK) was formed between KPM and CDC. In order to run the operations efficiently, a technical partner with experience in the processing of zinc was sought on agreement for equity sharing.

The equity in the project was then shared 40% to CDC, 40% to the technical partner and 20% for KPM (15 miners). This arrangement has enabled the company to raise funds required to rehabilitate the plant. The company is now planning to raise production from the current 500 tons/year to 5,000 tons/year of zinc.

The project, which employs about 100 people, raised a total of $ US 3.4 million with $3 million being capital investment and the rest working capital. The 15 miners that started the

project contend that it is better to own 20% of an efficiently operating project than 100% of a limping one.

Hire/purchase schemes

Plant hire/purchase scheme - Zimbabwe: The scheme is administered by the Chief Government Mining Engineer and enables small-scale miners to acquire mining and metallurgical equipment on condition that they present a sound mining proposal. Once the proposal is approved, the payback period is set at 1 to 3 years at 10% interest per annum. The payback period is fixed according to the value of the equipment, i.e., 12 months for quipment for low-cost items (up to $Z300), 24 months for items costing up to $Z600 and 36 months for equipment valued above $Z600.

2.2.5 Micro finance institutions in Ethiopia

As defined in World Bank (2000/01) report poverty is viewed as lack of money, lack of adequate food, shelter, education and health and the poor are vulnerable to ill health, economic dislocation and natural disaster. According to Meyer (2002) this perspectives of poverty can be used to access the impact of the MFIs on those who receives the services.

Ethiopia's microfinance support sector is relatively small. There is a very limited number of support institutions like credit bureaus, consultancy firms, rating agencies, specialised auditors, training institutions, microfinance programs in universities and organisations specialised in wholesale funding and guarantees, and their expertise in microfinance is limited or not existing at all.

The Association of Ethiopian Microfinance Institutions (AEMFI) is the network of all registered microfinance Institutions (MFIs) in Ethiopia. AEMFI's has three main objectives. First and foremost is to provide a forum and structure through which MFIs can share their

experiences and exchange information. Secondly, it strives to enhance the capacity of the member MFIs through offering training and negotiation for alternative funding resources from both local and international sources. Finally, it seeks to strengthen the entire MFI sector development through undertaking research, advocacy, promotion of the industry, engage dialogue with the government and other relevant international institutions with the view to positively influence MFI policy and practises.

Building on the successful networking within the mainstream MFI sector, AEMFI has expanded its scope of work to incorporate the co-operative sector as well.AEMFI is one of the best working microfinance networks in Africa but has limited means and capabilities to address all the needs of the sector. reaching vulnerable groups of clients Cordaid prefers MFIs with a clear social mission as partners.

The Objectives: Cordaid Microfinance Strategy for Ethiopia 2008-2010 were:

To increase outreach and quality of financial services for informal sector workers, and micro and small enterprises (MSEs). As the core of Cordaid's involvement in microfinance lies in

Strategies:

1. *Support established MFIs that want to serve geographically remote areas or new vulnerable client groups (people living with HIV/Aids, pastoralists, slum dwellers)*

2. *Support (pilots on) agricultural finance.*

3. Where there are no financial service providers yet, Cordaid seeks to support young (start-up) and emerging MFIs through capacity building and initial funding,sometimes on the basis of seed capital.

4. MSE finance (missing middle). To finance investor vehicles that focus on an enhanced access to financial services for MSEs.(Ethiopia Microfinance Country Strategy, 2008 – 2010) To this end MSEs. Institution are ready to serve the rural community .the next

responsibility lies on the shoulder of community leaders to motivating institutions to open branch near by the miners . (Befekadu B. Kereta, 2007)

2.2.6 Technical assistance programmes

Specific technical assistance programmes

The National Steering Committee of Service Providers (NSC) - SouthAfrica: Individual members of NSC contribute towards the development of the sector according to their areas of expertise. For example, the Council for Geosciences is responsible for conducting geological surveys for identified pilot projects, the outcome of which is then incorporated into the 0verall business plan.

The Council for Scientific and Industrial Research (CSIR) through its Miningtek branch has the responsibility to develop mine plans and the technology to be deployed.

Mintek is responsible for the processing of the mined ore and for adding value to the product. Examples of this are fine milling of mica, manufacturing bricks,leaching of copper oxide ore and cementing out copper metal to manufacture curios, making pottery rather than just selling the clay, etc. Other members of the committee, MEPC, Ntsika and Industrial Development Corporation then take on the organizational development, training and marketing aspects of the project.

Technical Extension Services - Zimbabwe： The Ministry responsible for mining through the departments of Mines, Geological Survey and Metallurgy offers free technical advisory services to small-scale miners in Zimbabwe. The services are provided through a network of regional mine offices located across the country.

There are also sub-offices or district offices depending on the size and level of activities in a particular region. The regional offices each have a regional geologist,mining engineer, metallurgist and a mining commissioner. The services include geological surveys, assaying, advice on mining techniques and other technical services.

Special units for provision of extension services

These include the Small-scale Mining Department of the Minerals Commission in Ghana and the Small-scale Mining Unit of the Mineral Resources Division in Tanzania.

Specialized training institutions

Zimbabwe School of Mines - Bulawayo： The school offers two-year diploma courses in mining engineering, surveying and metallurgy.

Madini Institute - Tanzania: The Madini Institute is located in Dodoma, Tanzania and trains mining technicians most of whom are absorbed by the regional and district mines offices and the private sector. The Institute, which has recently been upgraded to provide training leading to a full technician's certificate, is to be converted into a specialized Government agency.

Vocational Education Training Authority Institute - Tanzania: The Vocational Education Training Authority (VETA) in Tanzania runs vocational technical training through training institutes located in almost all regions of the country. The training usually targets primary and secondary school leavers. As part of its expansion programmes aimed at reaching all the important sectors of the economy, the Authority has secured a loan from the East African Development Bank to build a full-fledged mining vocational training institute in Shinyanga. (CASM ,2008)

2.2.7 National artisanal mining policy

The objective and strategies in the mining sector during plan for Accelerated and Sustainable Development to End Poverty (PASDEP) are Providing technical assistance and consultancy service for artisanal miners in order to help them improve their way of living, subsequently contributing to poverty reduction, increase the coverage of the country's surface area with geological mapping which is the basic data for miners exploration and infrastructure development, conduct hydrology, engineering geology and geophysical studies, conduct geological and geochemistry studies, delineate mineral potential areas of interest for private

investment, produce technical promotion documents which are of paramount importance for attracting investment and produce petroleum and petroleum products and help the country to be self sufficient in energy resources generate and save foreign currency as well.

The following targets are to be achieved by the end of 2009/2010

- The regional geological mapping data coverage which is basic data for mineral exploration and various infrastructure developments will be increased from 38% to 51% of the territory of the country at a quarter million scales,
- The hydro geological mapping coverage will be increased from 25%-40%,
- Investment in the sector will be increased by 10 fold,
- Eighty five percent of illegal metal production and marketing activities will be legalized,
- Total revenue of Birr 110.5 million will be gained from issuance and renewal of license, royalty...etc
- **Mining Legislation**
- As a result of the political change that took place in 1991, a new economic policy has been introduced in the country. In the mining sector, the government has promulgated a new Mining Proclamation and Mining Income Tax Proclamation to encourage the participation of private capital in mineral prospecting, exploration and development activities. The new Mining and Mining Income Tax Proclamations were issued in June 1993. The Mining Regulations came into effect in April 1994. The Mining Proclamation No. 52/1993 and the Mining Income Tax Proclamation No. 53/1993 were amended in favor of investors in 1996. New proclamation is introduced in order to facilitate the market aspects of mining 'Transaction of precious Minerals proclamation No…651'/2001

2.2.8 Strategies/incentives to discourage illegal trading

Precious Minerals and Marketing Corporation (PMMC)-Ghana：Prior to regularization of the small-scale mining sector, gold was being sold to middlemen who in turn smuggled it out of the country in search of foreign exchange. The strategy adopted by PMMC in order to discourage illegal trading was to offer attractive prices that would lure miners away from the middlemen. The offered price was etermined from the London A.M. Fix for gold for the day converted at the ruling Foreign Exchange Bureau rate of exchange of the day. Based on this, a minimum guaranteed price was announced weekly for 22-carat gold and it remained an assured price even if the world price for gold would fall. Prices for 18-24 carat gold were calculated on this basis and announced accordingly. In addition, the following incentives were also used to discourage illegal business:

(a) Pre-financing selected licensed buying agents;

(b) Procurement and supply of basic tools like weighing scales, shovels, pick axles, etc.; and

(c) Institution of an Annual Award to honour the best small-scale miner in terms of quality and value of minerals sold to PMMC. (Economic Commission for Africa,2002)

2.2.9 Women in mining

Gender Mainstreaming in Ethiopia

Over time, women's involvement in AM activities has tended to increase particularly in Africa (45-50% of all ASM workers in Africa are women), and they are also involved in ancillary mine site activities resulting from prevalence of family based of activities in rural Africa. Ethiopia women's involvement varies from around none in Gambela, 30% in Oromia (Adola), 40% in SNNPRS (Bonssa), 70-80% in Tigray, and up to 95% in some areas of Benishangul-Gumuz (e.g. Kutta worke or Menge), where women have traditionally been exploited. In most instances, women and girls are compelled to undertake the poorly paid ancillary operations including manual transport, ore crushing, washing, sorting and mineral dressing. For instance, in many sites, women's low status means that they only permitted to

treat the tailings (shofa) from the abandoned operation or from after the primary panning by men. In other sites they only work for part of the day to enhance the earning of their husbands. In general, for those women who are forced to work long and arduous hours they receive far less pay (e.g. at the Kokebe gold sites they receive between a third to half of the average male) that their male counterparts whilst also being expected to fulfill all their primary care- giving roles and also undertake the traditional domestic duties of fetching firewood, water cooking, etc. The fact that women are often limited to engaging in lower status and lower paid activities stems from cultural perception and traditional believes of the community in the appropriateness of work for men and women in gender division of labor.

Very few women manage AM enterprises as they find more difficult to get financial, legal, or technical support and gain ownership of land. In Article 35(right of women) of the constitution of the Federal Democratic Republic Ethiopia and national policy of Ethiopian women (1933), highlights the law status of the majority of Ethiopian women as a serious development issue, and the labor proclamation No. 377/2003 (part VI, chapter I, Article 87) protect their position.

However, many rural women still facing traditional and religious, obstacles (illiteracy insufficient technical knowledge, sexual/ chauvinist attitudes, patriarchal views social taboos and family responsibilities) in asserting their formal rights and discrimination under customary laws further contributing to the feminization of poverty in rural areas. Therefore, it may be prudent to try and determine whether promoting and assessing with the formation of specific women's AM cooperative may be of benefit to helping understanding and overcome the issue and challenge of women's multiple roles in AM communities.

Although provisions prohibiting women from working in mines are slowly disappearing, women still face a multitude of obstacles in their bid to participate fully in small-scale mining activities. However, there are already efforts in some countries to provide equal opportunities for women miners. The practices below represent a sample of such initiatives:

Addressing women issues in mining policies

Women Miners Associations

SADC Women in Mining Trust - Zambia: The Trust was formed in 1997 as a regional association in order to promote networking at a regional level. The Trust has been

nstrumental in the formation of a number of women miners' associations in the region and in mainstreaming gender.

Tanzania Women Miners Association (TAWOMA): TAWOMA was formed in 1997 at the initiative of women miners. The association has 192 members and headquarters in Dar-es-Salaam (August 2001). It has established branches in almost all major mining centres in the country. Its mission is "to facilitate women miners to organize and access required financial, technical and marketing services so that they can carry out mining activities that are both economically and commercially viable and environmentally sustainable and thereby raise the standard of living for women miners and their families". The goals of the association are to:

(a) Lobby for support of women miners nationally, regionally and internationally;

(b) Identify training and technical needs and organize resources to meet them;

(c) Provide relevant marketing information and facilitate minerals marketing;

(d) Set up a revolving fund to enable women access funding; and

(e) Serve as an advocate for women in mining to the Government.

The association has, amongst its priorities, the establishment of a gem-cutting unit and a resource and information centre. Over the long-term, it plans to establish equipment-hire, a testing-centre, lapidary and jewellery production units and a skills training-centre. TAWOMA is a member of the SADC Women in Mining Trust.

Specific programmes to support women miners

Assistance to women miners - South Africa: A group of rural, small-scale women miners have been mining kaolin from the mountainside in Nwdedwe, Kwa Zulu Natal. The kaolin is mostly sold through intermediaries to the pharmaceutical, cosmetics and pottery sectors within the local community. The miners managed to secure assistance from NSC to develop a business plan to ensure that the project operated within the legal framework and that it produced a product that would attract potential customers. NSC also agreed to assist in

providing technical backup, including drilling, ore body assessment and others. Eskom (South African Electricity Commission) agreed to provide a new site for the project and facilitate market access

2.2.10 Child labour

Child labour in Ethiopia

Even though Ethiopia has ratified the international labor organization (ILO) convention on the right of the child and the worst forms of child labor convention formed a special ministry of sport & youth and signed the organization of Africa Unity (OAU) charter on the right of children, child labor (CL)is still prevalent in many AM operation (particularly for gold gemstones). A combination of economic decline, poor education, poverty rural remoteness, a large informal working sector, poor governance, disease and HIV/AIDS has created condition that are rife/widespread/ for the exploration of CL together with a depressing increase in orphan hood like wise the ease of opportunity to exploit children, the growing proportion of the population under the age of 15 (45.7% (UNDP 2004) and the fact that child work is often considered part of the socialization process by many rural peoples has resulted in a high prevalence of CL in rural Ethiopia.

Although education is free through out the country some children are forced to either drop out or work part time in the mines to help support their families need. Some children and adolescents are simply lured by the prospect of becoming rich while others are encouraged by their parents to contribute to the family earnings; also women have no alternative to stay their children when they go to mining place like nursery school. So, they took to mining place. These children unconsciously start to work at their early stage, finally continue to work mining by selling their child labor.

The employment of children in SSM is very common in most countries in Africa.Young children break rocks manually and work underground in poor health and safety conditions.

There are already efforts being made by a number of countries to eliminate this problem. The following are examples of such best practices.

Addressing child labour issues in mining policies

The Mineral Policy of Tanzania - Women and Children Issues: Part of the mining policy strategies aim to address social problems that lead to children being employed and thus exposed to harsh mining conditions at tender ages. the policy also aims to provide alternatives as a way of addressing poverty problems that lead to the practice in the first place.

Child labour elimination

International Programme on Elimination of Child Labour (IPEC) - ILO: ILO launched the International Programme on the Elimination of Child Labour (IPEC) in 1992, with unding from 17 industrialized countries and the European Commission (ILO, 1998). IPEC is part of a direct intervention strategy in combating child labour. Other approaches include legal and market-based initiatives.

The SSM aspect of the programme, which is being implemented in Africa, Asia and Latin America, has already initiated gathering of sound data on the extent and nature of child labour in Madagascar and Burkina Faso. In Tanzania, the programme has been sensitizing all those concerned with child labour and supporting the withdrawal of children from mining areas. (Economic Commission for Africa,2002)

2.2. 11 Environmental management for small-scale mining

Many of the potential economic benefits of the small-scale mining sector are lost through poor practice in mining, processing and marketing the target minerals. The absence of adequate legal frameworks and secure rights for miners and communities exacerbates this problem. Local governance structures and institutions are typically underdeveloped. Artisanal and smallscale miners are often marginalized and there can be very serious disputes with

communities, government agencies and large-scale mining interests. Conflicts over access and land-use can be a particular issue in areas where indigenous or tribal peoples have traditional land rights or land-use patterns. These and other problems commonly associated with ASM (such as child labour, access to health care and education) present a major challenge to the government and ARTISANAL AND SMALL-SCALE MINING regulatory authorities in countries where these activities take place, as well as to the wider development community.

The policy sets out separate strategies for environmental management for small land large-scale mining. The SSM strategies aim to:

(a) Demonstrate and encourage the utilization of environmentally sound technologies;

(b) Provide environmental information through leaflets in national language (Kiswahili) and improve awareness through the media;

(c) Build partnerships with different stakeholders with a view to improving environmental awareness and management;

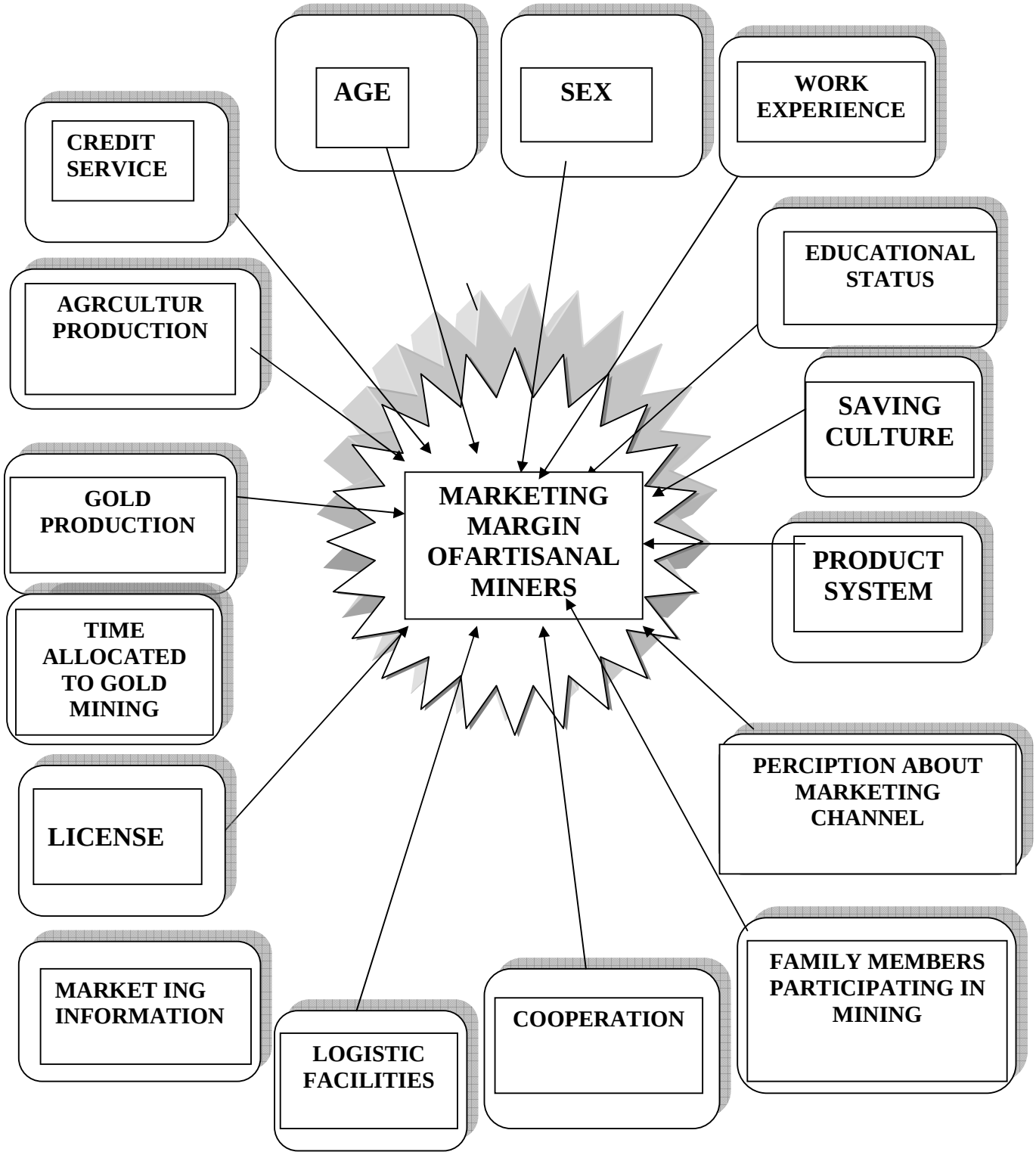
(d) Establish strict standards in densely mined areas and empower mining extension officers to carry out regular monitoring;

(e) Specify environmental control measures based on the “polluter pays”principle; and

(f) Establish proper authority structures to uphold law and order and facilitate enforcement of health and safety regulations.

2.3 conceptual frame work

Figure 1



CHAPTER III

MATERIALS AND METHODS

3.1 Description of the study area

The Benishangul Gumuz Regional State (BGRS) is one of the nine federal states of Ethiopia. Generally,the region is situated in the Blue Nile River Basin. With the reference to the country, the region is located in the North West part of Ethiopia. Based on the various sources, the land mass of the region is estimated to be 50,380 km^2.The Benishangul Gumuz Regional state is bounded by Amhara, Oromia, Gambella Regional States and the Republic of Sudan in the North, East, South and West, respectively. It stretches along the Sudanese border between $9^0{}_{35}{}''$ and 11^0 39" N western and eastern limits are between $34^0{}_{20}{}''$ to 36^0 30" E.

The BGRS has a substantial and varied natural resource base. The region has suitable agricultural land and a considerable number of livestock resources not yet utilized to the expected level. Its water resources are vast due to the existence of a number of perennial rivers. Various types of minerals that could be used for industrial and construction purposes are also found in the region. The region has also a big potential in natural tourism attractions because of the existence of diversified flora and fauna resources.

3.1.1 Administrative set-up

The Benishangul-Gumuz Region is divided in to three administrative zones and 20 woredas two of which are special woredas. Zone one – Assosa has eight woredas (one is special

woreda), zone two – kamashi – has five woredas and zone three – Metekel – has seven woredas of which one is a special woreda.

3.1.2 Population

Within the region, there are various types of religion. But, the well known and the dominant are Muslim, Orthodox Christian, protestant, catholic and traditional believe followers. Both Muslim and Orthodox Christian constitute the majority of the population of the region. With regard to population size, according to the CSA 2007, there is a total population of 670,847. From this number (50.7%) 340, 378 are male and (49.3) 330,469 female. Berta ethnic group, where they are living in Assosa Zone, constitute (25.89%) which is 173,743 of the total population of the region. Gumuz holds 141,646 (21.1%) of the total population of the region and inhabits in Metekel and kamashi zones. Shinasha constitute (7.6%) 50,916, inhabits in Metekel zone. In Mao-Komo special woreda there are 2 ethenic groups, mao and Komo. Mao constitutes (1.9%) 12,744 whereas Komo constitutes (0.9%) 6,464. Amhara, Oromo, and other inhabitants constitute about 42.61%, which is 285,847. The region is sparsely populated that there are 13 persons per square kilometers.

3.1.3 Land

The topography of the Region is characterized by plain undulating slopes and mountains. The altitude of the region ranges mainly between 580-2731 masl. The agro-climatic zonation of the Region can be categorized as 75% Kola, 24% Woina Dega, and 1% Dega.

3.1.4 Meteorology

The region's rainfall is uni-modal and obtains high rainfall from May to October. Generally, the rainfall is erratic from year to year. However, the highest rainfall occurs usually in

August. With regard to temperature, the lowest occurs in August. Nonetheless, variation of the mean monthly temperature is small. Temperature in the region also varies inversely with altitude. In Assosa and Bambasi areas annual maximum and minimum are 27^0_C and $15^0_{C,}$ respectively while in kamashi area average maximum temperature does not exceed 26^0c and minimum is around 13^0_C and in Kurmuk area average maximum temperature reaches up to 33^0_C

3.1.5 Metallic minerals occurrence/deposits of BGRS

From document review and field visit a total number of 118 primary and placer/alluvial gold, 7 copper, 9 iron, 2 chromite, 2 nichel, 4 molybdenum and 6 pyrite occurrences are documented. Gold is the main and widely occur metallic minerals in the Region where it is found in all the three administrative zones of the region including Mao-Komo special woreda. Although exploration activities for economic size primary gold are still going on in the Region by GSE, there is no active mine for primary gold currently.

Artisan gold mining activity is practiced in all the three zones of the region and is of the means of subsistence for large of number of the local people of the BGRS. Artisain gold miners in the region are estimated to be between 55,000 and 63,000 and an average of 180kg gold has been mined annually.

3.1.6 Geo-chemical and Metallogenic belts

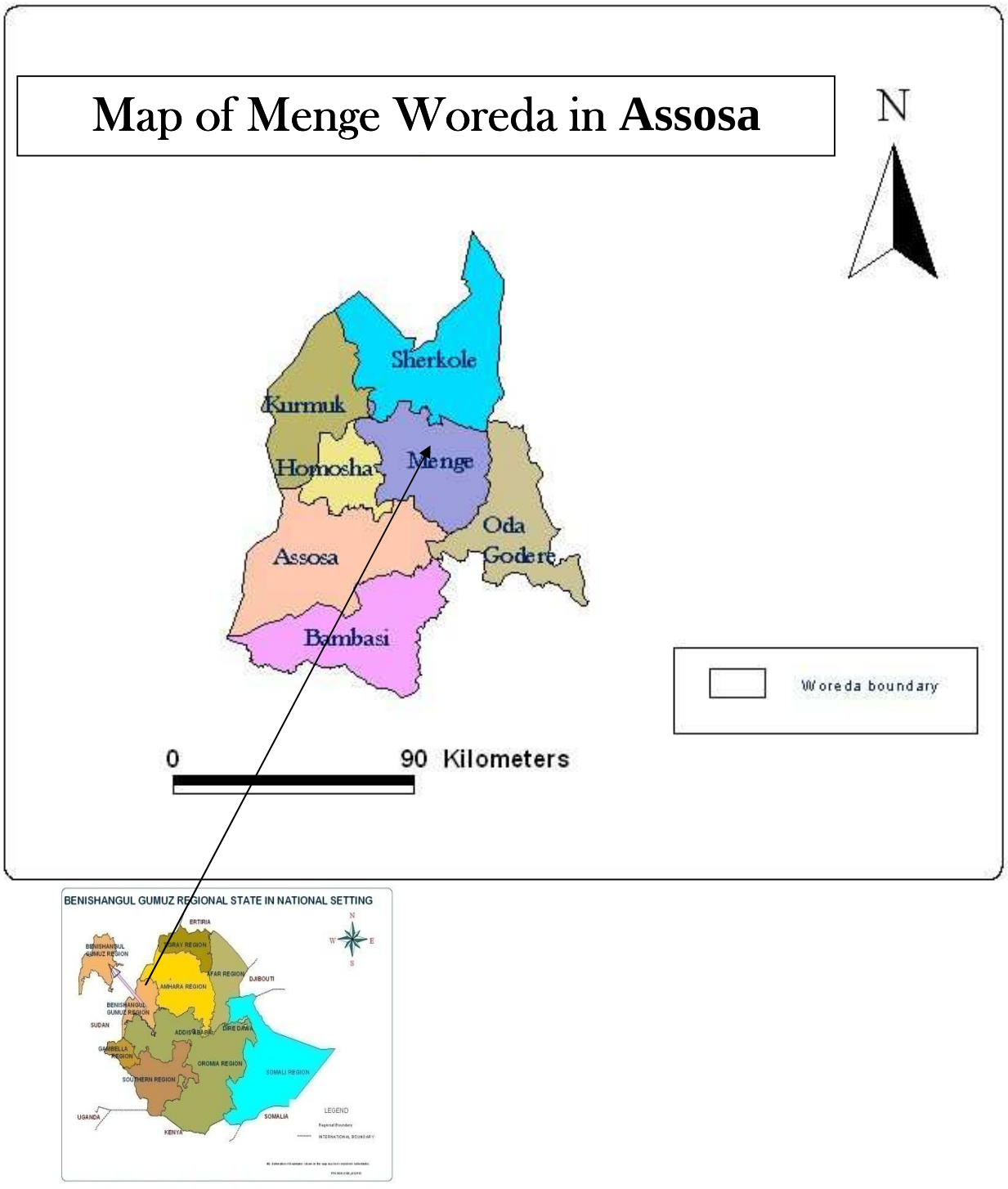
The different exploration activities performed by UNDP project in western part of the BGRS has out lined four major geo-chemical belts that cover about 800 km^2. In Belt I four geo-chemical sub-belts (A-D) have been defined. Sub-belt 'A' is mainly defined by Cu and Co anomaly. Sub-belt 'B' is characterized by significant Cu and Ni anomalies. Sub-belt 'C' is mainly defined by Sn and Mo anomalies and by alluvial placer occurrences. Geology and

alluvial gold occurrences were the bases to define sub - belt 'D'. Belt "II" covers areas of 20 x 6 km. The rocks in the sub-belt contain the Gio Ni - Cu, the Abumare Ni - Au anomalies. Belt III is characterized by anomalies of Au, Ni, Cu, Zn, Pb, Mo, Ag, As, Hg and Co. The area is about 85 km long and 15 km wide and is divided in to seven sub-belts. Belt 'IV' is defined by Odonok gold bearing quartz veins. In order to upgrade the previous data, a reconnaissance field visit was undertaken by IPS and six samples were collected for chemical analysis for gold and base metals. The samples were analyzed in the GSE laboratory by Atomic Absorption Spectrophotometer. The results obtained from highly silicified rock at ***Shegole***, quartz vein chip at *Sherkolo* and loam samples at ***Menge*** are very encouraging to look for further exploration to see their economic significance.

3.1.7 Study area

Menge Woreda is the area selected for the study, which is 56 km from the regional city Assosa, and 731 km from Addis Ababa with total area coverage of 1460.86 km^2. The altitude ranges from 1500-2000 above sea levels. According to the CSA, 2007, there is a total population of 40,129, consisting of 20,189 male, and 19,940 female. The Woreda is divided in to 21 administrative Kebeles, within which highly prospective wide area coverage placer/alluvial gold found in nine Kebeles, Banishogol, Fardos, and Segnor are leading. More than 80 % of the Woreda rural inhabitants used to support their life mainly to fill the gap created by agricultural production. They used to mine gold in traditional way. The resource is not limited to the habitats, but also the whole kebeles in the Woreda and other miners from different Woreda are the users of the resource.

FIGURE 2 MAP OF THE STUDY AREA



SOURCE: SOURCE REGIONAL GEOGRAFICAL INFORMATION SYSTEM

3.2.1 Sampling techniques

Multi stages random sampling method was employed. Assosa zone has seven Woreda. From these seven Woreda, Menge Woreda selected purposefully, because of its wide area coverage of gold mining and extensive activities of Artisanal miners. Secondly, Menge Woreda has 21 Kebeles of which nine Kebeles have wide area coverage of gold mineral. From nine Kebeles, four Kebeles were selected randomly., with in these four Kebeles a total of 1680 house hold heads participate in marketing of Gold ... From these four Kebeles by using probability proportionate to size ratio, 130 were selected (7.7%). The sampling process is depicted as under:

Table 1: Sampling process and sample size

Assosa	Total	Male	131.	Potentia	HHH/PO/	HHH/NON/	HHH/	HH
Kebele 01	1,111	638	473					
Gize	1.444	718	726					
Malo	1.974	1.003	971		548	77	471	36
Baneshegol	1.608	790	818		434	56	378	30
Kudivo	1.767	863	904		453			
Tumet	2.074	1.033	1,041		594	96	498	38
Fardiso	2.437	1,198	1,239		609			
Beldwesu	1,220	617	603		321			
Belmegoha	1.591	797	794		418	79	339	26
Abora	847	419	428		217			
Kashaf	3.133	1.508	1,625					
Fatseko	1.369	672	697					
Obmegele	1,505	747	758					
Abe Jindu	1.749	884	865					
Tumet	1,221	624	597					
Tumet	1,208	651	557					
Selama	2.319	1.151	1,168					
Sinvor	2,100	1.094	1,006		538			
Bela Fida	2.705	1.383	1,322					
adindu	1.250	632	618					
leamer	1.829	916	913					
Oundulu	2.104	1.063	1,041					
Total	*40,129*	*20,189*	*19,940*		*4132*	*308*	1686	130

SOURCE: CENTRAL STATISTICS AGENCY (2007) *the sample size counts of 130 respondents of gold miners*

3.2.2 Methods of Data Collection

Both primary and secondary data were collected for the study. Primary data sources are house hold heads of Artisanal miners from four randomly selected Kebeles administrations (KA). According to probability proportionate to the size from the forth Kebeles, 130 miners and 30 traders were selected. The interview schedule was developed in English and later translated in to Berta Language before administration. Data collection from miner respondents was done by five enumerators selected for this purpose. Appropriate training including field practice, was given to the enumerators to develop their understanding regarding the objectives of the study, the content of the interview schedule, how to approach the respondents, and conduct the interview. The researcher conducted focus group discussion by using checklist (one group comprising 8 members which includes mining experts, marketing experts, and experienced miners). Pre-testing of the interview schedule with 20 respondents was carried on. Based on the results, some modification was made on the final version of the interview schedule. The researcher involved in participant observation also by living with miners for one month.

Secondary data sources were taken from Regional Bureaus of Energy and mining development office, Menge Woreda rural development office energy and mining desk, Woreda office of small scale trade and industry, Custom agency, CSA ,NBE , Ministry of mining and Energy and Ministry of Agriculture and Rural Development. Besides, different and relevant published and unpublished reports, bulletins, websites were consulted to generate relevant data on gold marketing.

3.2.3 Methods of Data Analysis

Both descriptive statistics and econometrics model were employed to study the relationship between the dependent and explanatory variables. Using descriptive statistics such as percentage, mean, range and minimum as well as maximum values of variables were

indicated. The result obtained is used as an indicator of the relationship between dependent and independent variables. Moreover, econometric model were used to study the relationship between variables empirically. Hence, the binary Logit model was used to analysis the factors influencing the marketing margin artisanal miners.

3.2.3.1 Analysis of Marketing Margins

The relative share of different market participants was estimated using the marketing margin analysis. The marketing margins was calculated by finding price variations at producer, the following simple arithmetic model was used. **Total Gross Marketing Margin (TGMM) -** is always related to the final price paid by the end consumer and expressed as percentage (Mendoza, 1995).

$$\text{TGMM} = \frac{\text{consumers' price} - \text{Miner's price}}{\text{Consumers' price}} \times 100$$

 Producers' Gross Marketing Margin (GMMp) is the portion of the price paid by the consumer that belongs to the miners as a producer. The producers' gross marketing margin can be calculated as:

$$\text{GMMp} = \frac{\text{price paid by the consumer} - \text{Marketing Gross Margin}}{\text{Price paid by the consumer}} \times 100$$

3.2.3.2 Statistical Tests of Multicollinearity Problem

Before executing the econometric model, all the hypothesized explanatory variables were checked for the existence of multicollinearity problem. The problem of multicollinearity may arise due to a linear relationship among explanatory variables. Multicollinearity problem might cause the estimated regression coefficients to have wrong signs, smaller t-ratio for

many of the variables in the regression and high R^2 value. Besides, it causes large variance and standard error with a wide confidence interval. Hence, it is quite difficult to estimate accurately the effect of each variable (Gujarati, 1995, 2003 cited in Degu, 2007).

Different methods are often suggested to detect the existence of multicollinearity problem. Among them, Variance Inflation Factor (VIF) technique was employed in the present study to detect the existence of multicollinearity in continuous explanatory variables (Gujarati, 1995) and contingency coefficient (CC) for dummy variables (Healy, 1984 cited in Degu, 2007).According Gujarati (1995), VIF (Xi) can be defined as:

$$VIF(x_i) = \frac{1}{(1 - R_i^2)} \text{ Xi and}$$

Where:

R_i^2 is the multiple correlation coefficients between other explanatory variables. Selected continuous explanatory variables, (X_i) were regressed on all other continuous explanatory variables, and the coefficient of determination ($R_{i\,2}$) was constructed for each case. The largest the value of Ri^2 results in higher value of VIF (X_i), which causing higher co linearity between variables. For continuous variables as a rule of thumb, values of VIF greater than **10**,are often taken as a signal for the existence of multi co linearity problem in the model (if the value of $R_{i\,2}$ is 1, it would result higher VIF(∞)and case perfect multi co linearity between the variables (Gujarati,1995).In the same line, the Contingency Coefficients (C.C) was computed for dummy variables from chi-square (χ^2) value to detect the problem of multicollinearity (the degree of association between dummy variable). According to Healy (1984), the dummy variables are said to be collinear if the value of contingency coefficient is greater than **0.75** (cited in Degu, 2007).

$$CC = \sqrt{\frac{\chi^2}{N + \chi^2}}$$

Where:
C.C = contingency coefficient,
N=sample size,
χ_2 =chi-square values

3.2.3.3. Selection of the Econometric Model

When any of the explanatory variables in a regression model are binary, one can represent them as dummy variables and proceed with the analysis using linear regression. However, the application of linear regression model when the dependent variable is binary is more complex (Pindyck and Rubinfeld, 1981). Binary choice models assume that individuals are faced with a choice between two alternatives and their choice depends on their characteristics. Thus, the purpose of a qualitative choice model is to determine the probability that an individual with a given set of alternatives will make one choice rather than the alternative.

A number of statistical models have been developed that allow studying qualitative variable. A number of statistical models have been developed that allow to study qualitative variables; the two that have been most popular are the" logistic regression" and the probit models. These models can be easily applied to cases where the dependent variable is either nominal or ordinal, and has two or more levels, and the independent variables are any mix of qualitative and quantitative predictors. There is no difference between these two models one can choose based on familiarity and soft wear availability.

Both are estimated by maximum likelihood, consequently, goodness of fit and inferential statistics are based on the log likelihood and chi-square test statistics. The use of chi-square

test helps to decide whether two variables have a significant relationship with one another or not in a population. The test also determines if a conspicuous discrepancy exists between the observed and expected counts.

3.2.3.4 Binary Logistic Model

The data that are going to be collected from primary and secondary sources will be checked its completeness, accuracy and uniformity. The data according to their nature both qualitative and quantitative data classified, transcript, tabulated and all necessary pre –analysis activities done to make them amenable to analysis and interpretation.

Hosemer and Lemshew (1989) pointed out that a logistic regression has got advantage over others in the analysis of dichotomous outcome variables. There are two primary reasons for choosing the logistic distribution. It is an extremely flexible and easily used function. It lends itself to a meaningful interpretation. The Logit model is simpler in estimation than the Probit mode. Therefore, a binary logistic regression model is used to study the case of getting marketing margin or not of artisanal sampled mariners. The dependent variable in this case is a dummy variable (binary), which takes a value zero or one depending on the artisanal miner got the marketing margin level 1 or do not got margin. However, the explanatory variables are either continuous or binary.

The general model used to examine the factors influencing the marketing margin of artisanal miners level: - .

$P_i = F(Z_i)$ …… 1

$Z_i = \beta_0 + \Sigma_{j\ n}\beta j\ X_{ji} = [\log (P/1\text{-}P) = Zi = \alpha + \beta iXi + \ldots + \beta iXn]$, ……...2

This is the logit model (Engleman, 1981 and Gujarati, 1988)

Where, P_i = the probability that an individual miner user of marketing margin, the binary variable, $P_i = 1$ HHH got market margin and $P_i = 0$ for not get market margin.

Z_i = Estimated variable for the i_{th} observation,

F =.the functional relationship between Pi and Z_i,

i = 1, 2... m are observations on variables, the sample size.

X_{ji} = *the j_{th} explanatory variable for the* i_{th} observation, j = 1,2 …n,

βj = *a parameter, j = 0,1…n*

j = 0,1…, n where n is the total number of explanatory variables.

The Logit model assumes the underlying index; Z_i is a random variable that predicts the probability of the HHH to get the market margin .

$$Pi = \frac{1}{1 + e^{-z,}}$$ the probability that a artisanal miners will l get margin …….....3

$$1 - Pi = \frac{1}{1+e^{zi}}$$ the probability that a miner not get market margin……4

If the disturbance term Ui is taken into account, the Logit model becomes

$$Z_i = \beta_o + \sum_{i=1}^{m} \beta_i x_i + u_i$$

……..5

In this study, the above econometric model used to analyse the data. The model was estimated using the iterative maximum likelihood estimation procedure. This estimation procedure yields unbiased, efficient and consistent parameter estimates, particularly when the sample size is large.

3.2.4 Operational Definitions of the variables

Dependent Variables

Marketing Margins: Marketing margin is operationally defined as the total price paid by the consumer and the price received by producers difference .and worked out by mathematical formula finding the price variations at different segments and then comparing them with the final price to the consumer. The consumer price is then the base or the common denominator for all marketing margins. Computing the total gross marketing margin (TGMM) is always related to the final price or the price paid by the end consumer and expressed as a percentage.

Users and non users of marketing margin of the respondent in this study carries some commitment .Artisanal miners who sale their product at the farm get price or with out getting market margin categorised as ***non users of market margin***. those who sale the gold product at successive market other than farm get or first market ,at each stage they can make a difference per gram of gold sales to full margin considered as marketing margin users. Therefore, the variable is Dummy and if respondent is the user of marketing margin take a value of "1" otherwise "0"

The Independent Variables

1. Age (AGE.RESP): is defined as the number of completed years of the household head at the time of the survey to be conducted. It is a continuous variable represented by positive integer values. The assumption in this study is that as age of the miner increases; he acquires knowledge and experience through continuous learning and the level of responsibility to

manage the family and the need to accumulate assets for tomorrow becomes high, therefore expected to enable the seller to reach the better market to get more price.

2. Family participating in mining (FAMI.PATC): Family size or number of persons in the family participating in Gold mining activities. It is a continuous variable represented by positive integer values. The larger the family numbers, more labor force available for production. It refers to the quantity produced is more and seller needs better market. This variable may appear to have positive sign on marketing margin.

3. Education status (EDU.STAT): This represents the level of formal schooling completed by the household head. It is a category variable in terms of the household grade level. On one hand, educated miners are expected to have more exposure to the external environment and accumulated knowledge through formal learning which might enable them to pursue livelihood strategy that leads to better income through making use of available Opportunities of market. Therefore, it is hypothesized that education level of the miner positively related to the market margin.

4. Sex /SEX.RESP/: Sex is related to whether the individual is male or female.sex of a respond expected to have impact on the marketing margin of artisanal miners .Male are more strong in the bargaining so as to get better market. Females are less experienced in marketing because of cultural domination .The variable positively or negatively affect the market margin; it is a dummy variable, then if a respondent is female 0 or male 1

5.Agricultural production(AGRI.PRD) : Agricultural production is defined by the total income generated from Agricultural production .agricultural production income become enough or yields best miners will have a confidence to wait for some time until they get a

good market ,it is measured as a continuous variable measured in quintal, based on the observation of year 2009/10 agricultural production.

6. Gold production (ANNU.GOLDPO): Gold production is defined by the amount of gold produced by the house hold with in a day. The quantity of production per day matters to the decision where to sell .This also negatively or positively affects the marketing margin .The variable is continuous measured in gram.

7. Co-operation (**COOP.ORG):** This variable may represent more than one meaning. For the purpose of this research considered unity among miners in order to make control over their product enable them to get better price increase their bargaining power. The variable co-operation measured as a dummy variable taking value of "1" if the miners have institution or unity among them yes take a value of "1" and"0", otherwise.

8. Credit service (CRED.SER): credit service is defined by institutions that provide loan to miners. It is crucial for miners to have access to appropriate microfinance systems. Such support must reflect the specific needs of the respective miners. The credit facilities considered as to protect miners from illegal creditors and also empower them to wait till a time which they get appropriate price to their product. Therefore the variable is expected to positively affect the marketing margin. The variable credit facilities measured as a dummy variable taking value of "1" if the miners have access to credit yes and"0", otherwise.

9 Marketing information (MARK.INFO): A set of interrelated components that collect (or retrieve), process, store and distribute information to support decision-making, coordination and control in an organization .This refers, if the miner have the access to get marketing information he can give better decision so as to get better margin .therefore, this variable may

positively or negatively affect the market margin of miners. The variable is dichotomous if there is access to market information yes the value take “1” otherwise “0”

10. License: (LICENSE.RES): The License is operationally defined as official permission by government or under law or regulation given to miners and traders to produce or to sell Gold**.** The miners have no license to produce and also to sell their products, therefore the chance to search for a better market limited due to transporting the product with out a license is risk. Then this variable positively or negatively affect the market margin .The variable is dichotomous .if the miner have a license yes it takes the value “1” otherwise “0”

11. Work Experience (WORK.EXPR): A number of years the miners work on mining activity**.** In mining activity experience have a big share to get more product and the place where to sell is valid through the knowledge accumulation. Therefore, experienced miners have the knowledge of market which makes them beneficiary from market. Measurement of variable is continues and number of year respondent passed on mining activity.

12. Production system (PRUD.SYS): The respondent choice of production weather, to produce only Gold, or produce Gold as a major product and Agriculture as minor product or Agriculture as major and Gold as a minor production. Then, this production system will have positive or negative impact on marketing margin, Therefore, producing only gold increase the volume of produced Gold .more gold product will give more margin. The variable is category measured by multiple choice in which category the respondent reside

13. Logistic facilities (TRANSP.FAC): Logistic facilities defined by the access to get transportation, telephone, road, electric power and water. The chance to search for a better market is limited due to transportation, electricity, water, telephone, road and other logistic

support have play a vital role . This variable may negatively or positively affect the market margin .The variable is categorical. The question presents in the form of multiple choice which of the facilities more affect the marketing margin

14. Perception about the marketing channels (PERCP.CHAN): Referred to knowledge of HHH to different market channel. Miners perception about marketing channels Have a positive effect to their marketing margin .it helps them to make effort to minimize the long channel and make direct contact to consumers so as to obtain full margin .This variable is discrete. In order to know about miner's perception about marketing channels it should be measured through rating scale, from very effective to somewhat effective.

15. Saving culture (SAV.CULT): The amount thrift of reserve money the respondent has. Respondent who have a saving experience more confident not to sell their product soon after production due to financial problem. Therefore, this variable have positive or negative impact on market margin, it is dummy variable. If the respondent has saving take a value of "1" or has not take value of **"o"**

16. Time allocation to gold mining (TIME.ALL) time allocated to different type of work and more time gets a product more product and quality it obtain this has more impact over the market margin. With in this variable the time allocated to gold production, time allocated to agriculture and for both producers computed by category .there fore the variable expected to have positive or negative impact as the time allocated decrease or increase. It is a continuous variable while more time given to product expected to have more production. Hence, the volume of Gold produced increase more acceptance by whole sellers specially (Nugget[1]).

[1] A solid lump of a precious metal (especially Gold)

Table: 2 List of variables, their nature and measurement

NO.	VARIABLES		CODE	TYPE
A	**Dependent**			
	Marketing Margin	GMMM.P	Y	Dummy
B	**Independent**			
1-	Age	AGE.RESP	(X_1)	Continuous
2-	Family members participating in mining	FAMI.PATC	(X_2)	Continuous
3-	Educational status	EDU.STST	(X3)	Category
4-	SEX	SEX.RESP	(X_4)	Dummy
5-	Agricultural production	AGRI.PRD	(X5)	Continuous
6-	Gold production gold	ANNU.GOLDPO	(X_6)	Continuous
7-	Co-operation	COOP.ORG	(X_7)	Dummy
8-	Credit service	CRED.SERV	(X_8)	Dummy
9-	Marketing information	ACCMARK.INF	(X_9)	Dummy
10-	Licence	LICENSE.RES	(X_{10})	Dummy
11-	Work Experience	WORK.EXP	(X11)	Category
12-	Production system	PRUD.SYS	(X12)	category
13-	logistic Facilities	TRANS .FAC	(X_{13})	Category
14-	Saving culture	SAN.CULT	(X_{14})	Discrete
15-	Perception about marketing channels	PERCP.CHIAN	(X15)	category
16-	Time allocated to Gold mining	TIME.ALL	X16)	Category

CHAPTER IV

RESULT AND DISCUSSION

The nature of gold market has its own peculiar characteristics as comparing with other commodities. The price of gold is precisely known at the world and national market. Starting from the production /mining area/ to the final market, there are a number of market channels with respective intermediaries. Regular traders, commission agents, brokers, retailers and wholesalers are market players. Most of the above marketing actors involved in the market without having any license or legal permission. Due to its free entrance of buyers and exit from the market at any time they desire is very simple. Hence, it was very difficult to distinguish the real market actors. The purpose of this research was, to analysis the existing market channels, and to identify factors influencing the marketing margin of Artisanal miners. For this purpose, 130 household heads respondent, 30 different level traders and two groups of eight participants of focus group discussions were engaged. Data collected with the help of interview schedule and the result of group discussion analysis according to their respective specific objective with the help of descriptive statistics like mean, percentage, standard deviation chi-squared test and t-test was also employed. Econometric model was in use to identify the factors that influence the Artisanal Gold miners marketing margin.

4.1 Result of Descriptive Statistics

The analysis has three parts: the first part of analysis deals on the examining of existing marketing activities and marketing channels'. In this category, the respondents' personal characteristics, working tradition, gold and agriculture product, sales of gold and agricultural product, respondent market preference, market channel and share of market actors, were discussed comparing with the marketing margin.

Users and non users of marketing margin of the respondent in this study carry some commitment. Artisanal miners who sale their product at the farm get price or without getting market margin categorised as ***non users of market margin***. Those who sale the gold product at successive market other than farm get or first market at each stage they can make a difference per gram of gold sales to full margin considered as marketing margin users.

The second part of analysis deals on the factors influencing the marketing margin: identifying significantly affecting variables using statistical tools like correlation, collinearly effects, and prediction using binary Logit model presents. The third part investigates the role of legal and institutional factors to support the development of marketing margin of artisanal Gold miners.

4.1.1 Personal character

4.1.1.1. Age

As portray on the (table 3) Out of 130 sample household heads in three age groups, group 18-45 years consists 93. %, are very active working groups, and group of age from 46-64 consists 6.% are found to be less active age groups, totally 99% of the respondent make up economically active groups. The group above 65 of age comprises the remaining 1%. Within the first age group, 43.8 % have got the marketing margin. The remaining 56.2 % did not achieve marketing margin. From second age group 46-64, 75 % could attain the marketing margin only 25% did not. The hypotheses of this research, was as the age of artisanal miner increase, the responsibility to lead family increases. Then, wise decision making applied, therefore, tried to get better margin.

Table 3: age group of artisanal miners in contrast to marketing margin gain by respondent

Age group	Gross Marketing Margin						Total		
	users			Non users					
Attribute	number	% with in	% from total	number	% with in	% from total	number	% with in	% from Total
18-45	53	43.8%	88.3%	68	56.2%	97.1%	121	100.0%	93.1%
46-64	6	75.0%	10.0%	2	25.0%	2.9%	8	100.0%	6.2%
65 and above	1	100.0%	1.7%	0	0%	.0%	1	100.0%	.8%
count	60	46.2%		**70**	53.8%		130		100.0%

Source: Computed from primary data

4.1.1.2 Sex

From the sample household heads shown on (table 4), 77.7% were male and 22.3% were female. Out of this number of 53 males (40.7%) were non users of market margin and 48 males (36.9 %) were margin users. 17 women (13.1%)were also non margin users and 12 women (9.9%)were margin users. The variable did not show significant difference in achieving marketing margin. Mining is an activity carried out from beginning to end with group participation because; it has got different processes passes to get the final output. There is difference approach in selling gold product in this research area that all produced in the family collected for sale through the household heads. The unlimited power to administer the output is given too. Due to this reasons, the respondent to this research were all Household Heads /HHH/. From this household heads, here in most cases, male confine this responsibility through community cultural support. Females who take this responsibility were

cover 22% .The only rationale to seize this responsibility created through crack in the family by the death of husband /widows/.

Table 4: sex of Artisanal miners in contrast to marketing margin gain by respondent

sex	Gross Marketing Margin						total		
	Non users			users					
	number	% with in	% from total	number	% with in	% from total	number	% with in	% from total
male	53	52.5%	40.7%	48	47.5%	36.9%	101	100.0%	77.7%
female	17	58.6%	13.1%	12	41.4%	9.9%	29	100.0%	22.3%
count	**70**	53.8%		**60**	46.2%		130		100.0%

Source: Computed from primary data

4.1.1.3. Family participate in mining activities

The sample households have a total of 575 families ranging from 0 to 20 members. As depict in (table 5), out of this number, (40%) or 230 family members participate in mining. Most of them were children at school age. This research hypothesis that, as a number of family increases the output or product increase then, the more product the more margin earned .out of the total family size 34 HHH have no family ,then 67% of them did not get marketing margin ,only 32.4 % get the margin comparing within the group. But, those who have 5 to 10 families (100%) get the market margin .this celebrate the more family participant have a great contribution to market margin. The focus group discussion also certified grate contribution of family members to marketing margin. But, they put a remark some negative impacts on family planning and marriage of two or more wives for this purpose leads some social problems. It was also able to observe from focus group discussion that child labor was found

to be the principal problem of the sector. Children at pick time are also forced by their family to leave school for many days to work at mining site.

Table 5: Family members participate in mining comparing with the beneficiation of marketing margin

No of family	Gross Marketing Margin						Total		
	Non users			users					
	number	% with in	% from total	number	% with in	% from total	number	% with in	% from Total
0	23	67.6%	15%	11	32.4%	8%	34	100.0%	26%
1	19	61.3%	14.6%	12	38.7%	9%	31	100.0%	23.8%
2	21	60.0%	16%	14	40.0%	10.7%	35	100.0%	29.9
3	5	33.3%	3.8%	10	66.7%	7.6%	15	100.0%	11.5%
4	2	28.6%	1.5%	5	71.4%	3.8%	7	100.0%	5.38%
5	0	.0%	0%	2	100.0%	1.5%	2	100.0%	1.5%
6	0	.0%	.0%	3	100.0%	2.3%	3	100.0%	2.3%
9	0	.0%	.0%	2	100.0%	1.5%	2	100.0%	1.5%
10	0	.0%	.0%	1	100.0%	.75%	1	100.0%	.75%
Count	70	53.8%		60	46.2%		130	100.0%	

Source: Computed from primary data

4.1.1.4. Educational Status

As it is observed on (table 6), out of the total sample household heads (23.85%) have attained from grade 1-6, and (11.5 %) attained grade 7-12, those who have the ability to read and write comprises 15%, the remaining 50% were illiterate. This research hypothesis that as a level of education increases, miners' knowledge of market increases and they can search a better market to get an appropriate margin. The total number of illiterate was 65, out of this grouping, (83.1 %) were not the user of marketing margin. Comparing the group of

household heads who placed on 7-12 grade, (100%) of them are the users of the market margin. Then this clearly shows how education significantly affects the market margin. Apart from formal education, the researcher interviewed the respondents and tried to point out whether they have got training about marketing management or not, how marketing research support respondents to develop their knowledge of marketing, also the respondent are the user of extension service or not. However, all the answers were no. These 100 % identical answers make outliers , then the outliers cannot give statistically significant output, different extension packages underlined by all focus group participant as a fundamental solution to the artisanal miners or the better performing to get marketing margin.

Table 6: Educational status of respondent * total gross marketing margin gain by respondent Cross tabulation

Educational Level	Gross Marketing Margin						total		
	Non users			users					
	number	% with in	% from total	number	% with in	% from total	number	% with in	% from total
grade 1 to 6	3	9.7%	2.3%	28	90.3%	21.5%	31	100.0%	23.85%
grade 7 to 12	0	0%	0%	15	100.0%	11.5%	15	100.0%	11.5%
read and write only	13	68.4%	10%	6	31.6%	4.6%	19	100.0%	14.65%
illiterate	54	83.1%	41.5%	11	16.9%	8.46%	65	100%	50%
count	70	53.8%		60	46.2%		130	100%	100%

Source: computed from primary data

4.1.1.5. Production system

All selected sample HHHs are those who have direct relation to gold mining. There were three types of working practice. The first one is those who are only devoted on gold mining, second, those who are scheduled gold as major agriculture as minor activities and thirdly group of HHHs that takes agriculture as major and gold mining as minor activities.

As represent on table 7 (25%) of the respondents produced only gold within the group (57.6 %) were able to achieve the marketing margin. The second group who produce gold as a major product comprises (24%) within the group 54.8% were successfully accomplished the market margin. The third category, agriculture as a main product and gold to supplementary activities comprises (50.7%). Nonetheless, those who are able to get the market margin were only (36.4%). This output point out that producing only gold has better consequence.

Table 7: production system by gross marketing margin

TYPE PRODUCTION SYSTEM	Gross Marketing Margin						total		
	Non users			users					
	number	% with in	% from total	number	% with in	% from total	number	% with in	% from total
only gold mining	14	42.4%	10.76%	19	57.6%	14.6%	33	100.0%	25.38%
Gold major agriculture minor	14	45.2%	10.76%	17	54.8%	13.%	31	100.0%	23.84%
Agriculture major gold seco	42	63.6%	32.3%	24	36.4%	18.46%	66	100.0%	50.76%
count	70	53.8%		60	46.2%		130		100%

Source: Computed from primary data

4.1.1.6. Work experience

This variable was hypothesized that as a miner develops his working experience, the knowledge he acquires on marketing assists him for better marketing margin. As indicated in (table 8), the first group, those who have experience up to 5 years, were (37%) out of the total respondents. Within this group (60.4%) do not achieve the marketing margin. The second group (6-10 years working experience) comprises 35% of the total respondents. Within this group, (53.3%) were not the user of the market margin .The third group (11-15 years of experience) consists of (12%) of the total respondents. Inside the group, 66.7% could not get the marketing margin. The fourth collection, (16-20) years experience consists of (12 %) of

the total sample HHH. Within this group (60%) were the user of marketing margin. The fifth cluster, (21 and above experience) were (2%) of the total sample HHHs. Within the group 85.7% were the users of the market margin .This shows, as the number of years experience increases, likelihood of being the user of market margin increases.

The output of the study also agrees with the focus group discussion observation. The remark of the group regarding work experience as follows: The new sound of alarm in the field of mining is the increasing opportunity of not getting gold after exerting much labor. One of the reasons to this event is that, there is no geological mapping work done in the area in order to minimize the labor wastage of Artisan miners'.

Table 8: Work experience by the marketing margin

No years	Gross Marketing Margin						total		
	Non users			users					
	number	% with in	% from total	number	% with in	% from total	number	% with in	% from total
0-5	29	60.4%	22.3%	19	39.6%	14.6%	48	100.0%	36.9%
6-10	24	53.3%	18.4%	21	46.7%	16.1%	45	100.0%	34.8%
11-15	10	66.7%	7.6%	5	33.3%	3.8%	15	100.0%	11.5%
16-20	6	40.0%	4.6%	9	60.0%	6.9%	15	100.0%	11.5%
above 20	1	14.3%	0.76%	6	85.7%	4.6%	7	100.0%	5.3%
count	**70**	**53.8%**		**60**	**46.2%**		**130**		**100%**

Source: Computed from primary data

4.1.1.7. Time allocated to gold mining

Gold production time is calculated in terms of week. This tradition came from team operation started on Sunday and completed on Friday, and then miners back to their home. The

hypothesis to this variable was, the more time allocated to gold production, and then more production is liable to better marketing margin. As depict on (table 9) the minimum weeks (6-10) schedule by 26 miners. Within this collection 25 miners (96%) were not the user of market margin whereas, those who allocated maximum time (above 21 weeks and above) were 17 miners of which (82.4 %) were successful in getting the market margin.

Table 9: Time allocated to mining of gold by total marketing margin

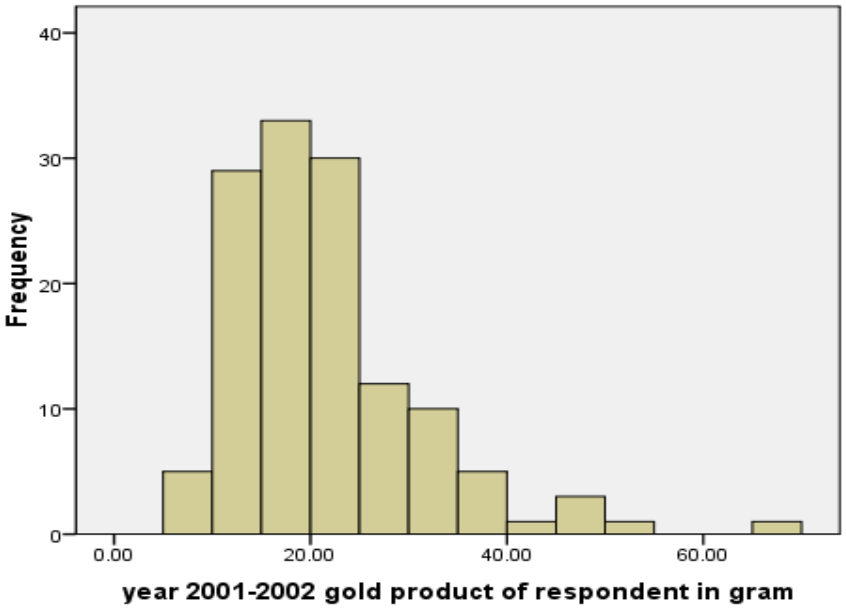
No weeks	Gross Marketing Margin						total		
	Non users			users					
	number	% with in	% from total	number	% with in	% from total	number	% with in	% from total
6-10	25	96.2%	19.2%	1	3.8%	0.76%	26	100.0%	20%
11-15	26	53.1%	20%	23	46.9%	17.69%	49	100.0%	37.69%
16-20	16	42.1%	12.3%	22	57.9%	16.9%	38	100.0%	29.2
above 20	3	17.6%	2.3%	14	82.4%	10.77%	17	100.0%	13.11%
Count	***70***	***53.8%***		***60***	***46.2%***		***130***		***100.0%***

Source: Computed from primary data

4.1.1.8. Gold production

The total amount of gold produced by 130 sample HHHs shown on the (figure 3) were 2,788.44 gms. This ranges from 7.4 gms to the maximum production of 65.35 gms of gold. The average production was 21.45 gms. Comparing the minimum production with the maximum one, the market margin, 39 producers placed on the minimum production, which ranges from 7.4 to15 gms. Within this group, 74.4% did not get the marketing margin. On the other hand, the maximum producer group (41 gm and above) were 6 in number and from this group 83.3% get the marketing margin.

Figure 3: the year 2009 – 2010 gold produced by respondents



N	Valid 130
Mean	21.4495
Variance	91.660
Range	57.95
Sum	2788.44
Minimum	7.40
maximum	65.35

Source: Computed from primary data

4.1.1.9. Agriculture product

Still agriculture is a leading product in the research area. Out of 130 sample HHHs, depict on (figure 4) only 36 respondents were not involved in agriculture. This comprises 27% of the total respondents. The total production was 1,147.61 quintals; the range was a minimum of 4.69 quintals to the maximum 28.8 quintals, and the mean product was 12.21 quintals. The products were: sesame, Soya been, Maize, Sorghum, and Okra. The hypothesis of this research was, as the agriculture product increases miners get confidence to wait for some time not selling the gold. Hence, they can get better price of it. As the result of this research, we can understand that from the least producers (4-6quintals), 72% were not the user of Market margin, but from maximum producers (21 and above quintals), 71% were the user of market margin.

Figure 4: the year 2009 – 2010 agricultural production by respondents

N Missing	Valid 94 36
Mean	12.2086
Variance	26.450
Range	24.11
Sum	1147.61
Std. Deviation	5.14292
Maximum	28.80
Minimum	4.69

Source: Computed from primary data

4.1.1.10. Comparing Gold and Agriculture Income

While Agriculture was the leading activities in the area, the average earnings from gold was birr 6,975.00 and agricultural average earning was also birr 6360.77. No Considerable variation has been observed; when one compare the earnings from gold and agricultural productions. This can be seen as the maximum earning from gold reaches to 2, 2681.90 birr whereas Agricultural earnings were 1, 4994.00 birr.

Table 10: Comparing Gold and Agriculture Income

	Valid	Missing	Mean	Std. Deviation	Range	Minimum	Maximum	Sum
Gold sales income	130	0	6974.5	3280.07	20204.90	2477.00	22681.90	906689.20
Agriculture sales Income	94	36	6374.7	2791.53	20204.90	2319.50	14994.00	599230.65

Source: Computed from primary data

4.1.2 Marketing margin

The research found out that there are eight functional market points from producers (the Artisanal miners) to the final consumers' delegate (National Bank of Ethiopia). Quarterly Report (2001-2002) of Bureau of Industry and Commerce also confirmed the output. The nature of the market price percentage increases as the distance increases from production site to each successive market at an average price of birr 9.65 /gram of gold. The increment variation ranges from minimum birr 5.00 to birr 16.27. The full series from producer to consumer is an average variation of birr 67.25. This outcome comes up from the weighted average selling price of gold one year transaction.

Total Gross Marketing Margin (TGMM) - is always related to the final price paid by the end consumer and expressed as percentage (Mendoza, 1995).

TGMM= Consumers' price - Farmers' price X 100

Consumers' price

 Producers' Gross Marketing Margin (GMMp) is the portion of the price paid by the consumer that belongs to the miners as a producer. The producers' gross marketing margin can be calculated as:

GMMp= Price paid by the consumer - Marketing Gross Margin x 100

Price paid by the consumer

1..... GMMp= [22]275.00 -342.56 x 100 20%

342.56

2.....production site market price 275.00
Village market price 282.50
Production site gross margin = 7.50 birr per gram of gold

3……..village market price 282.50
Shegol market price 287.50
Village market gross margin = 5.00 birr per gram of gold

4..... Shegol market price 287.50
Menge market price 292.50
Shegol market gross margin = 5.00 birr per gram of gold

5..... Menge market price 292.50
Assosa market price 305.00
Menge market gross margin = 12.50 birr per gram of gold

6..... Assosa market price 305.00
Addis Ababa market price 321.25
Assosa market gross margin = 16.25 birr per gram of gold

7..... Addis Ababa market price 321.25
World market price 326.25
Addis Ababa market margin = 5.00 birr per gram of gold

8..... World market price 326.25
National Bank market price 342.56
National Bank market price gross margin = 16.31 birr per gram of gold

Table 11: Market Price of gold on quarterly bases

Market place	Yekatit – Miazia 2001	Genbot – Hamele 2001	Nehase-Tikemt 2001-02	Hidar-Tir 2002	Weighted average price
Production site	220.00	240.00	280.00	360.00	275.00
Village market	225.00	245.00	290.00	370.00	282.50
Shegol market	230.00	250.00	295.00	375.00	287.50
Menge market	235.00	255.00	300.00	380.00	292.50
Assosa market	245.00	275.00	310.00	390.00	305.00
Addis Ababa	260.00	285.00	330.00	410.00	321.25
World market	265.00	290.00	335.00	415.00	326.25
National market NBE	278.25	304.50	351.75	435.75	342.56

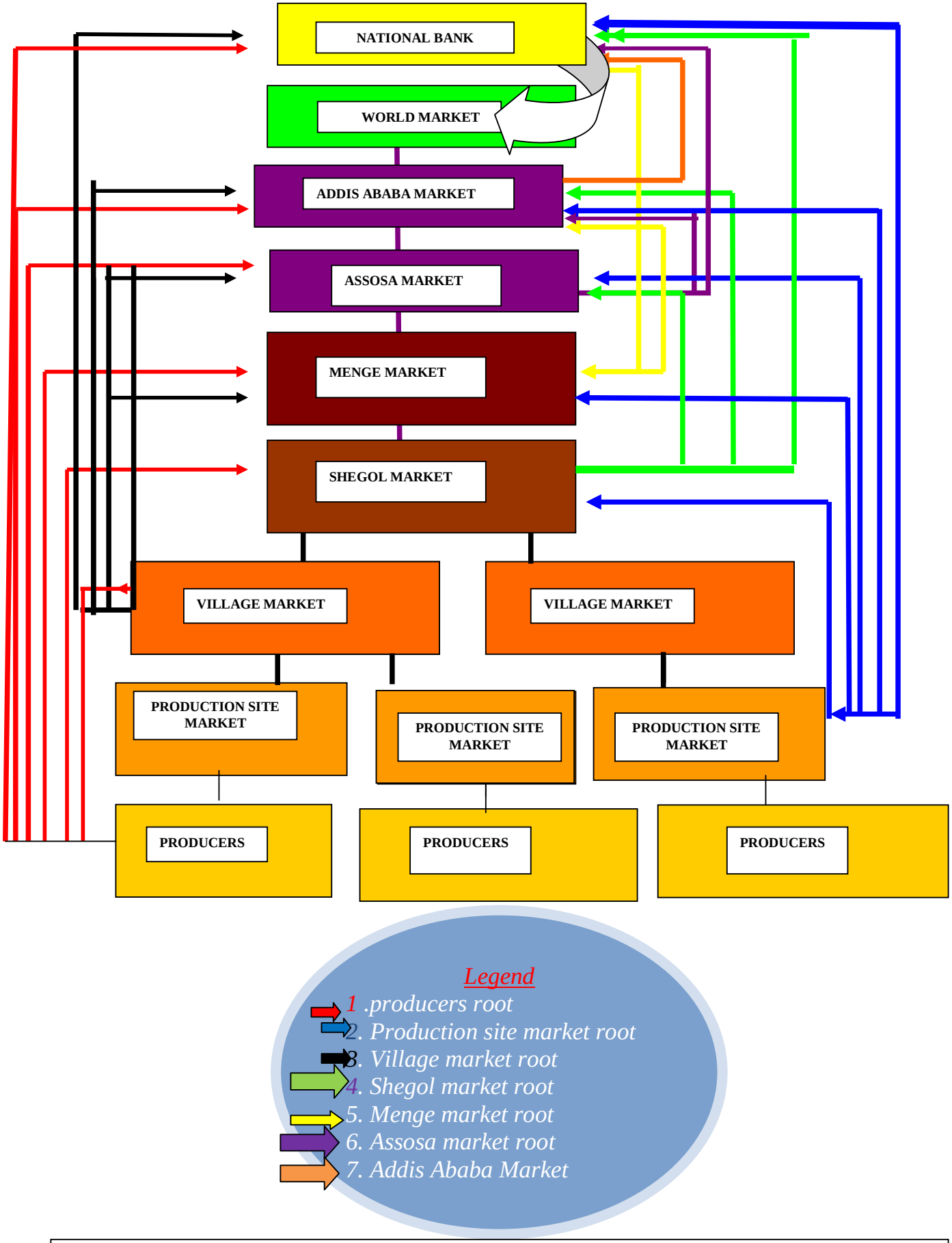
Source: Regional trade and commerce bureau quarterly report

Table 12: Miners sell their product quarterly and annual average

Market place	Yekatitia-miaz		Genbot-Hamele		Nehasse-Tikemt		Hidar -Tir		Weigh ave	
	Freq	%	Freq	%	Freq	%	Freq	%	freq	%
PRODUCTION SITE	84	64.6	83	63.8	88	67.7	104	80	89.75	69
VILLAGE MARKET	4	3	4	3	17	13	10	7.7	8.75	6.7
SHEGOL MARKET	11	8.5	8	6.2	0	0	0	0	4.75	3.67
MENGE MARKET	9	6.9	12	9.2	11	8.5	5	3.8	9.25	7.1
ASSOSA MARKET	19	14.6	4	3.1	13	10	9	6.9	11.25	8.65
ADDIS ABABA MARKET	3	2.3	14	10.8	1	.8	2	1.5	5	3.8
WORLD MARKET	0	0	0	0	0	0	0	0	0	0
NATIONAL BANK	0	0	5	3.8	0	0	0	0	1.25	1.08
Total	**130**	**100.0**	**130**	**100**	**130**	**100**	**130**	**100**	**130**	**100**

Source: Computed from primary data

Figure 5: Menge Woreda Gold Marketing Channel



Source: Computed from primary data

4.2 Identification of the Important Factors influencing the marketing margin of Artisanal miners

4.2.1 Statistical results for the binary logistic regression model

In the next parts of this report, the descriptive analysis of the important explanatory variables that were expected to have impact on the marketing margin of artisanal miners was presented. In this section, the hypothesized explanatory variables were used to estimate the binary logistic regression model to analyse the important factors that determine the artisanal miners to have the market margin or not. A binary logistic regression model was fitted to estimate the effects of hypothesized explanatory variables on the probability of being the user of margin or not. JMP 5 and SPSS 16 for windows were used for the analysis. Prior to the estimation of the model parameters, it is crucial to check the problems of multicolinearity or association among the potential; candidates variables. The data we use in the analysis might display little variation and /or high inter correlation, which leads to high standard error or very low t-ratios the situations where the explanatory variables are highly inter correlated is referred to as multi co linearity (Maddala,1992).

To this end, the contingency coefficients (CC), which measures the association between various discrete variables based on the chi-square, were computed in order to check the degree of association among the discrete variable. The value of CC ranges between 0 and 1, where zero indicating no associations between the variables and the value close to one indicating a high degree of association. The variance inflation factor (VIF) is a measured used for associations among continuous explanatory variables.

According to Maddala (1992), VIF can be defined as:

$$VIF(x_i) = \frac{1}{1- R^2_i}$$

VIF (x_i) = 1

Where, R^2_i is the squared multiplied correlation coefficient between Xi and the other explanatory variables. A statistical package known as SPSS version 16 was employed to compute the VIF values. Once VIF values computed the R^2 values can be calculated using the formula.

The VIF values displayed in (Appendix table 2) has shown that all the continuous explanatory variables have no serious multicollinearity problem except the variable work experience. As a result, all the three continuous variables were retained and entered into the binary logistic analysis.

The first step before variables entered to the model were checked significant relationship between the explanatory variable and dependent variable of continuous variables using t-test. Displayed on (table12) six continuous variables computed and only four variables were significant relation with dependent variable at a level of 95% level of confidence absorbed.

Table 13 T-test for continuous data

VARIABLE	NON USERS			USERS			
	Mean	Std. Deviation	t-value	p-value	Mean	Std. Deviation	
Family members participate	1.20	1.071	4.058	.000***	2.43	2.265	
Work experience on mining	.94	1.020	2.044	.005***	1.37	1.340	
Weeks assigned to mining	1.96	.875	5.767	.972	2.82	.813	
Production System	2.40	.806	-2.178	.844	2.08	.850	
Year 2001-2002 gold product	17.3363	5.68456	5.956	.000***	26.2483	10.91444	
Year 2001-2002 Agriculture	1.9286	1.33320	.107	.015**	1.9000	1.71435	

Source: Computed from primary data

Similarly, chi-square used to test the significant relationship between categorical independent Variable with dummy dependent variable as shown on table 14 out of ten categorical variables 7 variables remain valid and three were rejected.

At the third step, independent continuous and discrete variables significant relation with dependent variable nominee were 7 discrete and 4 continuous independent variables.

Table 14: Chi-square test for frequency differences of discrete variables

Dichotomous	score	Non users		users		total		Chi-square
VARIABLES		No	%	No	%	No	%	
Age	0	66	94.3%	5	8.3%	71	54.6%	96.313 000***
	1	4	5.7%	54	90.0%	58	44.6%	
	2	0	.0%	1	1.7%	1	.8%	
Sex	0	17	24.3%	12	20.0%	29	22.3%	342(b .558
	1	53	75.7%	48	80.0%	101	77.7%	
Educational status	0	65	92.9%	5	8.3%	70	53.8%	93.517(a) .000***
	1	2	2.9%	12	20.0%	14	10.8%	
	2	3	4.3%	28	46.7%	31	23.8%	
	3	0	.0%	15	25.0%	15	11.5%	
Saving culture	0	69	98.6%	14	23.3%	83	63.8%	79.230 000***
	1	1	1.4%	46	76.7%	47	36.2%	
Cooperative member	0	69	98.6%	42	70.0%	111	85.4%	21.134(b) 000***
	1	1	1.4%	18	30.0%	19	14.6%	
License	0	70	100.0%	58	96.7%	128	98.5%	2.370(b) .124
	1	0	.0%	2	3.3%	2	1.5%	
Marketing information	0	66	94.3%	9	15.0%	75	57.7%	83.207(b) .000***
	1	4	5.7%	51	85.0%	55	42.3%	
Credit service	0	68	97.1%	4	6.7%	72	55.4%	107.029(b. 000***
	1	2	2.9%	56	93.3%	58	44.6%	
Market channel perception	0	42	60.0%	29	48.3%	71	54.6%	4.322(a) .115
	1	27	38.6%	26	43.3%	53	40.8%	
	2	1	1.4%	5	8.3%	6	4.6%	
Logistic facility problem	0	2	2.9%	0	.0%	2	1.5%	89.901(a) .000***
	1	28	40.0%	8	13.3%	36	27.7%	
	2	4	5.7%	0	.0%	4	3.1%	
	3	1	1.4%	49	81.7%	50	38.5%	
	4	35	50.0%	3	5.0%	38	29.2%	

Source: Computed from primary data

contingency coefficient for discrete variables was computed and the result shows that out of 7 variables all have no serious multicollinearity problem among discrete explanatory variables (appendix table 1)at the fourth step continuous variables was computed VIF ,and the result shows that out of 4 variables, three were no serious multicollinearity problem among continuous variables (appendix table 2). Eventually, a set of 10 explanatory variables

(3 continuous and7 discrete) were included in the model and used in the logistic analysis. These variables included in the model were selected based on theoretical explanations that how the demographic, economical and organizational characteristics of respondents are related to the two main user or non user of marketing margin measures.

To select the Best fitted variable ,the method of forward and back word likelihood ratio give automatic selection access based on the given confidence level. It uses step by step method to included and excluded variables, so that it is clear to understand. To this end the forward likelihood ratio employed and sorted out 5 variables at the confidence level of (95%) and 1 variable at (99%) confidence level. f*ourth step*. On table 15, the model fit shows a minimum score of -2 Log likelihood ratios and maximum level of cox and snall R^2 at the fourth step. Also on the classification table attached on Annex 3 depict percentage correct 97.7 independent variable explained dependent variable.

Table 15 Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	83.709(a)	.521	.696
2	29.682(b)	.684	.914
3	21.503(c)	.703	.940
4	13.460(c)	.721	.963

Source: result of binary Logit model

At the fifth stage, one variable at confidence interval of 99% and other five variables at confidence interval of 95% be statistically significant out of ten variables. The parameter estimation for binary Logit on table shows the result of the model.

Table 16: Parameter Estimate for Binary Logit (variable in the equation)

Variables		B	S.E.	Wald	df	Sig.	Exp(B)
		Lower	Upper	Lower	Upper	Lower	Upper
Step 4(d)	COOP.ORG	5.440	2.355	5.336	1	.021**	230.452
	EDU.STST	2.739	1.299	4.443	1	.035**	15.469
	SAV.CULT	4.000	1.656	5.836	1	.016**	54.584
	MARK.INFOR	4.718	2.228	4.484	1	.034**	111.990
	CRED.SERV	2.064	.475	18.870	1	.000***	7.875
	AGRI.PRD	.109	.044	6.093	1	.014**	1.115
	Constant	-6.990	2.348	8.866	1	.003	.001

Source: result of binary Logit model

***, **, significant at 1%, 5% level of significant, respectively.

4.2.2. Cooperation of miners

Informal cooperation among miners created for momentary action regarding price and control to other marketing events. The survey result shows, out of 19 cooperation participant miners 18 miners were market margin users. The model also tests the significance of variable at 95% confidence interval. Then the hypothesis that, the cooperation among miners increase the marketing margin of artisanal miners. But, this temporary cooperation is not valid unless changed to a valid and vibrant marketing cooperative established. The focus group discussion agrees with this idea too and they request training on the as to how to come to marketing cooperative.

4.2.3. Education status of Respondents

The variable is significant, 0.035, at (P< 0.05) and has positive association with the marketing margin. As the educational level of artisanal miner gets higher, he can easily understand the process and market channels, operation and benefits which is relevant to increase the market margin. The positive effect of this variable indicates the importance of education in influencing miners' market selection, time of sale, market management, decision-making and utilization of different opportunities, which increase the marketing margin of artisanal miners. This result is consistent with ideas stated in Dubey, Singh and Khera (1982) found that participation in decision-making remained mostly same irrespective of their educational level.

4.2.4. Annual Agriculture production

This variable has an effect on the competence of miners to make a decision on gold market to wait for a time to better price. At confidence interval 0.014, at (P<5%) the result agreed with the idea that as agricultural production increases, the miner will have a potential to wait for some time to get better market price. As the production increases by one unit, it will have a 9.65 increment on the marketing margin or the probability to get marketing margin increases as the odd ratio indicates, with the assumption of ceteris paribus. Observation from focus group discussion also certified this fact.

One point that can be raised at this juncture is that miners have a strong link and attachment with agriculture and rely on it for their livelihood though it has been practiced in a more traditional manner with backward technologies. So, it needs special attention of all development partners in introducing improved technologies to make living out of these wide and virgin arable land as gold is a non renewable resource. It was also able to understand and

as the participants of focus group discussion suggested, for sustainable income and better gold marketing margin it is vital to support or invest on Agriculture as the income generated from Gold is very minimal.

4.2.5. Market information

The variable affects the intelligence or cleverness for making a decision on what time and places to sale his product. The more and precise information tend to get miners better marketing margin. The variable has a confidence interval of 0.034, at (P<05%). The result of the research agrees with the initial hypothesis.

4.2.6 Credit service

This variable also empowers the potential of miners to give reliable and become stable on decision making following the market trend. As hypothesised, if the miners get credit services they become stable and expand their work, and they do not forced by miscellaneous expenses to sale their product under margin. This variable supported by the model at the confidence interval 0.000, at (P<1%). The odd ratio also shows, as the credit service provided to artisanal miner the ability to get marketing margin increases one unit, by 5.537. Also the focus group discussion identified a number of (usurers[2]) which create burden on the society and one of the reason not to get reliable margin was the lenders did not give time to make a decision to sale at better market. The importance of microfinance institution underlined.

4.2.7 Saving culture

The variable indicates the ability to resist against financial problems of present as well as the future. Respondents who have money can make constant decision and the ability to wait or make immediate sale decision was under their control. Because, no other force make them to sell. They have financial capacity to choose the best market which made them the better user

[2] Money lender at excessive interest

of market margin. This variable supported by the survey at a confidence interval 0.016(P<05%). As the respondent saving capacity increases, the ability to get market margin increases by 792.023 to one unit as the odd ratio shows with the assumption of ceteris paribus. The focus group discussion also runs the same idea with this output. The saving culture is not developing in the society, that's why they are detaining under poverty.

4.2.8. Market channel perception

The survey identified different market channels with their respective market margin. In this margin, as the level of market changed or step in the channel increases, the margin also increases to which the seller reaches to final consumer. Even though, the variable did not get significant output, the table portrayed ,out of 130 respondent only 6 miners have best perception on market channel 71 miners comprises (55%)did not have any idea about marketing channel.

Table: 17 Market Channel Perception * total gross marketing margin gain by respondent

		Total gross marketing margin gain by respondent		Total
		non user	user	
MARKET CHANNEL PERCEPTION	POOR	42	29	71
	BETTER	27	26	53
	BEST	1	5	6
Total		**70**	**60**	**130**

Source: result of binary Logit model

4.3 The role of legal and institutional support

Policy rules, regulation, and institution are key elements for stable marketing system. When there is stabilized or regulated market in the system both buyers and sellers will have relatively benefited. The main problem in the mining sector was the limited capacity to regulate or control the movement by the government, and the sector is vulnerable to illegal

activates. Due to this reason, in most cases artisanal miners exposed to mistreatment by middleman.

The study reviewed how much effort being made by the sector in supporting the artisanal miners to make them benefited from the market using different rules and institutions.

4.3.1. Institutions

The mining sector organized in the federal level on the status of ministry, by the name of Ministry of Mining and Energy. At the regional level organized on the status of Bureau, but it is pooled with Water, Mining and Energy Offices. As it is observed during the survey, most of the Bureau activities were devoted to water and related activities. At woreda level the sector organized under the Office of Agriculture and Rural Development on the status of Desk delegate by the desk team leader. One of the supports that the community is expecting from the mining office was to obtain relevant and timely information on marketing and related activities. Concerning the support given to the community, the research interviewed 130 HHHs, 12 traders and the focus group discussion members. From 130 respondents, 123 respondents did not get marketing and related information. This means the services reached only for 5.4% of the respondents

Table 18: SUPPORT TO MARKET INFORMATION

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	NO	123	93.9	94.6	94.6
	YES	7	5.3	5.4	100.0
	Total	130	99.2	100.0	
Missing	System	1	.8		
Total		**131**	**100.0**		

Source: primary data

4.3.2 Technical support

Under this variable, marketing research, extension service, value additions integrated and presented to the users in the form of interview and discussion. The result of the research indicates that the services did not reach to the community at all.

4.3.3 Laws and regulation

As a result of the political change that took place in 1991, a new economic policy has been introduced in the country. In the mining sector, the government has promulgated a new Mining Proclamation and Mining Income Tax Proclamation to encourage the participation of private capital in mineral prospecting, exploration and development activities. The new Mining and Mining Income Tax Proclamations were issued in June 1993. The Mining Regulations came into effect in April 1994. The Mining Proclamation No. 52/1993 and the Mining Income Tax Proclamation No. 53/1993 were amended in favor of investors in 1996. New proclamation is introduced in order to facilitate the market aspects of mining 'Transaction of precious Minerals proclamation No…651'/2001.

Under this variable, how the respondents are familiar or accustom with these different laws regarding to the mining activities was observed and respondents were interviewed about how the law control the marketing activities and also licensing.

To start with the newly introduced proclamation regarding transaction tax for precious minerals No.651/2001, it is very essential for Artisanal miners in order to give them chance to transact their product direct to export. If they fully understand and organized in such a way, the law allows them to do so. But the awareness of them is only 2% and the remaining 98% are out of the track or do not have any type of information concerning the law.

Table 19: Awareness of miners with different mining regulations

		Income tax regulation 53/93		Income tax regulation Amendment no.23/93		Transaction tax for precious minerals no.651/2001	
		frequency	**percent**	**frequency**	**percent**	**frequency**	**percent**
Valid	NO	124	95%	122	94%	128	98%
	YES	6	5%	8	6%	2	2%
	Total	**130**	**100**	**130**	**100**	**130**	**100**

Source: primary data

4.3.4 Licensing

Licensing is an official permission to do something, which is either from a government or under a law or regulation. Experience of different countries revealed that license has the advantage for both the licensed and license issuer. A miner to be secured and to get different support from government license is very important. Also, the mining recourse is not renewable item, the need to have proper utilization have double effect: that is, making use of resource for longer period of time, and supply to the market as demanded. It also gives a title to administrate the resource on the bases of different types of contract agreements. On the side of the government, it helps to controls over the proper utilization of resource, to prevent environmental degradation, and at large the income from tax. This mutual benefit can not easily be understood by miners. To this end, all concerned bodies prepare themselves for strong and a prolonged awareness creation work. Also, the survey tried to know how many of the miners have production, and how many of the Traders have selling license, including their intension about licensing was absorbed all activities performed with out License.

CHAPTER V

CONCLUSION AND RECOMMENDATION

5.1. Conclusion

This study was undertaken with the intention of addressing the fact that why the long year's artisanal gold miners' effort towards gold mining activities has not improved the livelihood of miners. To come up to the answer, understanding of existing state of market affairs was very essential. Based on this information, finding the factors which have influence over the marketing margin of Artisanal miners was very crucial for this research. Examining the role of legal and institutional support from concerned government bodies was also equally important as these Artisanal miners in Menge Woreda comprises almost (83%) of the total population, and used the field as a means of continued existence next to Agriculture. After the identification step, the intention of the research was vital to give solution to the problem. Then, this part of the research detailed the important findings and recommendation.

Before passing to the findings, it is worthwhile to state some difficulties encountered through out the study. As the nature of gold is considered as means of accumulating wealth, it gave rise to fear to get the appropriate data from respondents as predicted. The respondents frightened the research interview by relating with income tax collection. The respondents also did not have experience to make an interview with strange person and did not have the patience in the interview for more than 5 minutes. On the other hand, the remoteness of the area and language barriers put their image on the research.

Staying with them for long period of time to make a lobby works with the help of opinion leaders, selecting native enumerators and trained them, above all, make use of participatory approach principles like giving priority to express their idea, give respection for their idea, taking the role of facilitator, using films to convince them and make a documentary film together were some of the researcher's mechanisms to resist against the challenge.

Different methods and techniques were employed to collect, analyze and interpret data to keep the quality and creditability of the research. Afterwards, the following selected findings were obtained and presented as follows:

After critical examination of the current market channels, the research found eight gold marketing channels from producers to the consumer. The total market margin of Birr 67.56 per gram of gold was 20% of consumer's price. This 67.56 Birr per gram market margin shared among different market intermediaries who have no contribution to production or value addition. The minimum share of margin reaches from 5.00 Birr per gram on the production site market up to maximum margin of 16.81 birr per gram. This was paid by the National Bank of Ethiopia including the incentive 5% to local miners. As it was observed in this research that gold market channel has a unique nature of free movement of producers and other market actors to select their own root or contact unlike other market channel, agriculture. They were not forced to sell only to the subsequent channel. Due to this free movement, 1.08 % of respondent miners reached to the final market to get the full margin Birr 67.65, but only 16.81 birr per gram increment from the preceding (line) market. Miners sell 3.8%, 8.65%, 7.1%, 3.65% and 5.2% of their gold products at Addis Ababa, Assosa, Menge, Shegol, and village market, respectively. Even though the free root of market were

existing, 69% of artisanal miners sell their product at production site (farm get) without any market margin.

This was attention-grabbing part of the research to finding out the reason. Then the research treated this case as of factors influencing marketing margin of artisanal miners. To this end, the research found that marketing margin of artisanal miners was positively affected by credit service at (99%) confidence interval. Marketing information, saving status, educational status, agricultural production and cooperation also positively affected the marketing margin of artisanal miners at 95% confidence interval.

In consideration of legal and institutional support, two mining tax and one newly developed transaction of precious minerals proclamations were declared but 95% of the artisanal miners were not aware of it. The expected marketing information and technical support of different level of concerned government organizations valid at 5.4% and only 12% of 30 sample traders have license to purchase and sell gold products. Nonetheless, all production and marketing activities performed entirely without any license. Hence, the long market channels, too many market intermediaries, largely poverty driven livelihoods of the community, and too little capacity of government to control illegal operations aggravated the problem.

5.2. Recommendation

To improve the marketing margin of Artisanal gold miners, the following points are recommended based on the results of the study.

1. Launch direct market channel with National Bank of Ethiopia:

The marketing costs and margins can be increased when different marketing agents are involved. Most of the marketing margins were taken by wholesalers and retailers. Pure gold were marketed from producer to secondary level market in order to obtain better price and

improve the marketing margin. Then artisanal miners should supply gold product directly to the National Bank of Ethiopia. In the long run miners prepare themselves to processing into export marketing system. The new proclamation "Transaction of Precious Minerals Proclamation No…651'/2001'' also encourages doing so. These solutions have also a mutual benefit to miners as well as the government. The part played by the government will be facilitating the institution whereas effectively using of institution on the side of miners.

2. Encourage microfinance institution to open branch near by Artisanal miners and also government should setup revolving and collateral fund:

The financial position of miners should be improved through supplying credit facilities and developing the culture of saving to properly attain the opportunities seen in the prevailing increasing trend of gold market.

- Local leaders should have to invite and give incentive to micro-finance institution to open branch and give services.
- It is also possible to allocate a fund by Woreda and Regional government to facilitate collateral often requested by financial institution to miners. National Bank should have to give attention to this highly potential area which can contribute a lot to the national economy.

- ***Identify and develop schemes that will enable miners to have access to finance***. Financial empowerment of small-scale miners is a prerequisite for the success of the overall development strategy of the sector. This requires the establishment of special financing schemes, such as government/donor-supported financing programmes, revolving loans, equity-based schemes, hire/lease/purchase schemes, buyers' credits, group schemes and others.

- **3. Organizing valid and vibrant marketing cooperatives:**

Extensive training and education should be given on marketing, production and technical management, and on the how to strength the bargaining power of this dispersed Artisanal

miners in organizing them in a valid and vibrant marketing cooperatives as they have a significant role in solving marketing problems of smallholders, and has long been recognized.

4. Develop integrated Extension service, marketing research and marketing information system:

- ***Establish a specialized small-scale mining unit/department within the Ministry responsible for mining that will promote and provide support services to the sector.***

The unit must have a core of multi-disciplinary qualified personnel and should have regional offices strategically located close to SSM areas. Experts in mining technology, environment, gender, and child labour, financing, minerals marketing, and others, should be provided.

- ***Establish a network of regional and district offices located in all key mining areas so that monitoring and assistance programmes can be executed effectively.***

In order to monitor, supervise and assist the SSM sector effectively, a network of mining offices located in all major mining areas should be set up. Each office should have qualified experts to assist the miners. The set-up will enable the district or regional office to deal with a relatively small group of miners and operate more effectively. By being located close to mining areas, the offices can easily deal with emergencies, deliver assistance programmes quickly, and develop the trust and good relations with the miners that are essential for development of the sector.

- ***Through the small-scale unit/department, develop extension services aimed at assisting miners to adopt working techniques that are efficient and environmentally acceptable.***

These programmes should be developed in consultation with the miners, and to maximize impact, they should be localized in the regional and district offices.

- ***Identify and develop mechanisms that will allow small-scale miners to have access to training, demonstration of efficient working techniques and acquisition of appropriate working equipment.***

5. Encourage Investment on Agriculture and value addition:

The mining activity still play the role of filling the gap or deficiency created in Agricultural income. Besides this, gold is not a renewable resource. So, due consideration should be given for sustaining the income. Here, making investment on Agriculture sector from gold income can be taken as one of the remedies for the sustaining of income.

6. **Coordinating action should be taken to improve existing market environment:**

The Regional and Woreda Administration strategic plan should give a first-class attention to the fulfilment of infrastructure, and the way how to control illegal marketing environment in order to bring change in the livelihood of Artisanal miners. This is because illegal market poorly treated miners, and infrastructure problems also have a significant contribution for the poor attainment of the needed marketing margin which in turn largely decreases the income of miners.

- Develop a mining policy that incorporates a poverty reduction dimension in SSM strategies and recognizes small-scale mining as a potential economic sector with clear identification of constraints and potential.
- Develop specific regulations for small-scale mining in order to address environmental protection, health and safety requirements that are practical, implementable and within the technical and financial capacities of the miners.

7. **All Development plan regarding Artisanal Miners should incorporate women affairs, child labour and environment protection.**

A valid discussion was conducted with focus groups concerning women work load, child labour that have been the cause for school drop outs and class repetition of school boys especially during pick time of gold extraction, and environmental degradation issues. The focus group discussion undoubtedly accepted the existence of the aforementioned problems of having a direct association with the activity, and arrived at conclusion of considering the issues in development plans of all the respective organs.

8. **Federal regional government support on developing Geological mapping:**

The issue was also mentioned in focus group discussion that the increasing tendency of losing products after wasting much labours and time. This is due to lack of geological mapping to indicate the potential area. They mentioned the experience of neighbouring country, the Sudan. It is pretty known that, geological mapping needs high investment cost, but the Regional and Woreda Administration Offices should have to request the support of Federal Government as a main concern. The research has also found this as a leading problem on the sector and the sector has been found as a job of probability or lottery.

5.3. Implications for future research

1. This research was based on marketing margin of artisanal miners or marketing aspect. Nonetheless, the challenges of mining/production are equally important elements to be investigated.
2. The work over load of artisanal women needs to be at the immediate attention of the policy makers and other concerned parties so that it can be given a dead-lock.
3. The impact of gold extraction during the pick season on child labor and school dropout rates need to be further investigated as it has not been seen critically in this current study.
4. As gold extraction has a direct link to the environment, the concerned bodies in the region should give due attention for the protection aspect as well as the judicious utilization of the same for the sustainable development**.**

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ANNEXURE

The variance Inflation Factor for continuous explanatory variables (annex 1)

CONTINUOUS Variables	tolerance	VIF	R^2
famliy members participate in mining	3.089	.002	1.00
work experience on mining	.111	.912	11.36
gold product of respondent in gram	3.498	.001	1.00
Agriculture product of respondent quintal	-3.175	.002	1.00

Contingency Coefficient of discrete variables in binary logit(annex 2)

	SEX.RE	EDU.RES	SAV.CUL	COOP	LICESE	MARK.INF	CREDIT	MARKETCH	LOGI	AGE
SEX.RES	1	0.131	0.019	0.337	0.067	0.047	0.002	0.210	0.074	0.484
EDU.RES		1	0.623	0.375	0.158	0.542	0.603	0.330	0.594	0.601
SAV.CUL			1	0.346	0.036	0.527	0.579	0.227	0.620	0.536
coop				1	0.052	0.331	0.313	0.124	0.364	0.337
LICENSE					1	0.035	0.138	0.034	0.156	0.131
MARK.INF						1	0.592	0.255	0.539	0.568
CREDIT							1	0.186	0.609	0.609
MARK.CHAN								1	0.251	0.223
LOGISTIC									1	0.569
AGE										1

Classification Table(a) (ANNEX 3)

Observed			Predicted		
			total gross marketing margin gain by respondent		Percentage Correct
			non user	user	non user
Step 4	total gross marketing margin gain by respondent	non user	69	1	98.6
		user	2	58	96.7
	Overall Percentage				97.7

a The cut value is .500

FIGURE (ANNEX 5) MONTHLY WORLD MARKET GOLD PRICE

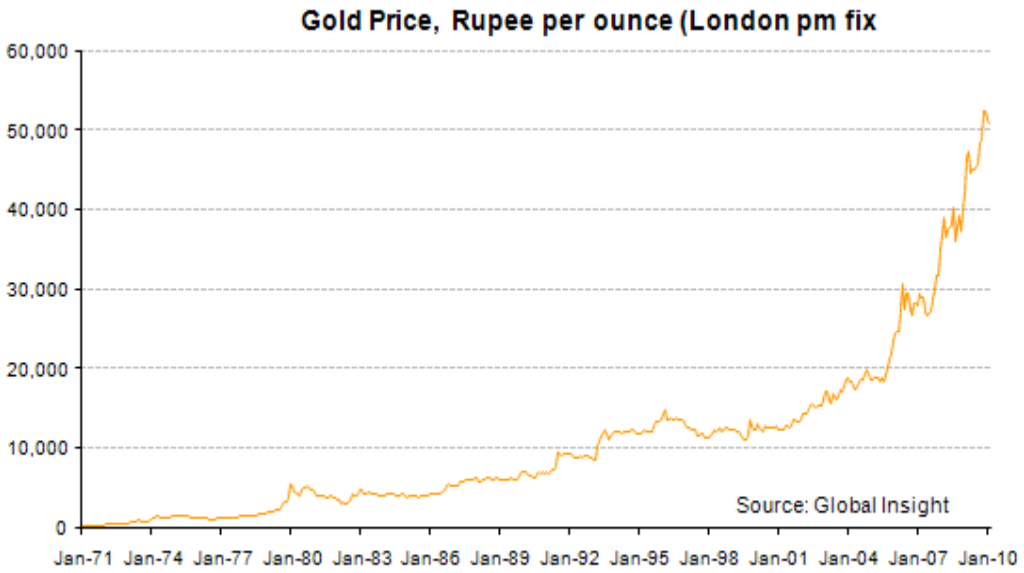
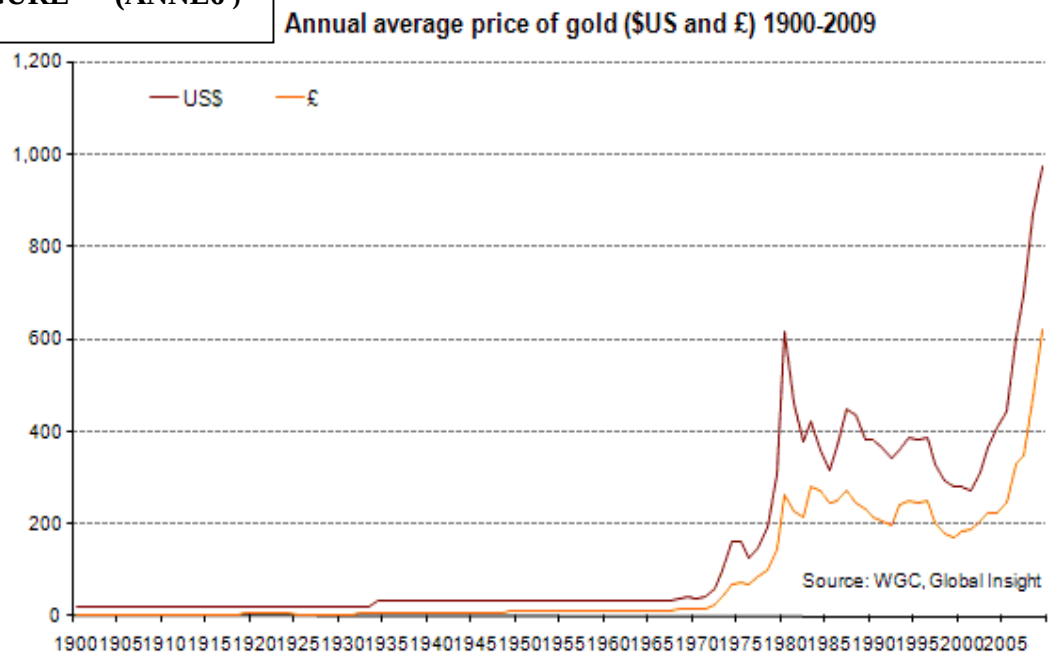


FIGURE (ANNE6)



Check list for focus group discussion with officials, expertise, opinion leaders, and Experienced miners

- *What are the marketing channels? How the miners do perceived it?*
- *What are the main problems which decrease the income of Artisanal mines?*
- *What are the obstacles to undertake value addition work?*
- *Do you believe cooperatives increase the bargaining power of the miners?*
- *How do you see the women work load in the society?*
- *How do you see child labour on mining activities?*
- *How extension service being introduced? Who is responsible to this?*
- *What are the problems of licensing?*
- *What are the efforts to be made in order to make available the service of financial institutions to Artisanal miners?*
- *what is the mechanism to control illegal trade/contraband/?*
- *What are the basic infrastructure problems in the mining area?*
- *What are the challenges that hinder the contribution of gold production to the national economy?*
- *What limits Government and another stockholder support in the development of gold mining sub sector?*
- *How the small Artisanal miners can reconcile mining with agricultural activities?*
- *How Artisanal miners can benefit from opportunities fair trade and export provided by the new proclamation?*

- *Is the mining activity has any environmental impact ?how can it be improved?*

Mekelle University

College of Business and Economics

Department of Cooperatives studies

Program of Cooperatives Marketing

This interview schedule is prepared to collect data from Artisanal/traditional/ gold miners for the purpose of studying the factors influencing marketing margin of Artisanal miners in Menge woreda,Benshangul Gumuz Regional state,Ethiopia.. This interview schedule is used only for the academic purpose. Therefore, I will keep the information confidentially and will not be transferred to third party without prior consent of you.

Thank you for your cooperation.

I. General information

1. Name of the enumerator_____ Signature_____
2. Date _____
3. Name of the woreda_____
4. Name of the keble _____
5. Distance of the keble from the woreda center (Kms) _____
6. Special Name(Got)_____

II Age and family

Code of respondent ----------

Age ----------

Sex----------

III) Educational status

a. Primary education (1st-6th grade) [ ]

b. Secondary education (7-12 grade) [ ]

c. Read and write [ ]

d. Illiterate (can not read and write) [ ]

Marital status,

1. Single [ ] , 2. Married [ ], 3. Divorced [ ], 3. Widowed [ ]

Religion, *1. Christian, [ ] 2. Muslim [ ] 3.protestant [ ] , Others----------*

IV Age of family members

S.N	*AGE*	*No of Families*
1.	*Dependent (<15 years)*	
2.	*Adult (15-65 years)*	
3.	*Dependent (> 65 years)*	

- *. Do you get extension service?*

1. Yes [ ] 2. No [ ]

- *If yes who is extension service provider?*

1. Government [ ] 2. N.G.O [ ] 3. Others ……..

- *What are the services you get from the service provider?*

1. Introducing new technology [ ] 2. How to improve Quality [ ]

3. Introducing new market approach [ ] 4. experience of the same industry which have best performance [ ] 5. others ……. ……..……..……..……..……..……..

5. Where was the market place you sale last year gold product ,what was the quantity ?

S.N	*Market place*	*Distance from your home*	*Amount of gold in gm*	*price*	
				Unit	*total*
1	*At production site*				
2	*In the village*				
3	*On weekly market*				
4	*Menge market*				

5	*Assosa market*				
6	*Addis Ababa market*				
7	*Other market*				

- ***Access to marketing information***

- *Through what mechanisms do you get about market information?*

1. Media (radio and TV) [ ] 2. Friends [ ] 3. Government agencies [ ]

4. Self observation [ ] 5. Retailers [ ] 6. Middle man [ ]

7. Others ……

- *How do you know whether there will be maximum or minimum price of gold in the market similar to your type of product either locally or regionally?*

1. No mechanism [ ]

2. Through government officials [ ]

3. Through traders [ ]

4. From other farmers [ ]

- *Do you think you have equal information with the merchant about the existing*

market situation?

1. Yes [ ] 2. No [ ]

- *If not, what problem do you face by the absence of that information*

*1.*_____

*2.*_____

*3.*_____

Do you have transportation facility through out the year?

. Yes [ ] 2. No [ ]

Credit

- *In your view do you think that credit is necessary to the mining activity ?*

1. Yes [ ] 2. No [ ]

If yes, for which type of activities it is important

1.……

2.……

3.……

4.……

- *Have you got any rural credit?*

1. Yes [ ] 2. No [ ]

If yes ,Who are the credit service provider in your area ?

1. *Government organizations [ ] 2. Private organization [ ]*
2. *Local lenders [ ] 4. Others [ ]*

- *Have you ever got credit?*

  1. Yes [ ] 2. No [ ]

- *,If yes, Where was the source?.....*

  What was the amount of money? that you get …….birr

  What was the interest rate? Explain……birr

How do you view the level of interest rate?

1. Cheap [ ] 2. Faire [ ] 3. Moderate [ ] 4. Expensive [ ] 5. Highly expansive [ ]

- *How about its payback period?*

  1. Medium [ ] 2. Long [ ] 3. Too short [ ] 4. Fair [ ]

- *What were the main activates you made with the loan?*

  1. House hold consumption [ ] 2. Children school [ ] 3. Health care [ ] 4. Social ceremony[ ] 5. Agricultural activities[ ] 6. Ot hers

  …….……..……..……..……..……..

- *12 Have you ever take loan before production ?*

  1.Yes [ ] 2. No [ ]

If yes , did you face any challenge on your decision due to the immediate request of payment by the creditor ?

- *How many days you spent on mining activities last year?.....*
- *what was the amount of gold you get?.....gm*
- *How many of your family members participate on the mining activities?.....for how many days?.....*
- *what was the amount of gold your family members get?.....gm*
- *Which time of season was best to production of gold ?*

  1. Hamille-Meskerem [ ] 2.Tikemt-Tahasass [ ] 3.Tir –Megabit [ ]

  4.Miazia-Sene [ ] 5.No difference [ ]

- *which time of season was best to sale gold ?*

  1. Hamille-Meskerem [ ] 2.Tikemt-Tahasass [ ] 3.Tir –Megabit [ ]

  4.Miazia-Sene [ ] 5.No difference [ ]

- *which are the marketing channel with respect to gold trade in the locality?*

  1.Village Assemblers, [ ] 2.Brokers,Commission Agents[ ] 3.Retailers[ ]

  4.Whole sellers [ ] 5.Exporters[ ] 6.Consumers[ ]

- *Which are the channels you perceive as efficient in gold trade?*

S.N	*Name of Channel*	*Very effective (3)*	*Effective (2)*	*Somewhat effective (1)*
	Village Assemblers			
	Village Assemblers Brokers,Commission Agents			
	Retailers			
	Whole sellers			
	Exporters			
	Consumers			

- *Who is the decision maker on the purchasing price at a producer level ?*

  1. Producer [ ] 2. Wholesaler [ ] 3. Retailer [ ] 4. Consumer [ ]

  5. Government [ ] 6. Demand and Supply [ ]

- *If you do not find buyers for your product, what do you do?*

  1._____ 2._____

- *Do you have any way of grading your gold product before bringing to the market?*

  1. Yes [ ] 2. No [ ]

- *If yes, in what basis do you grade your product?*

  1. Color [ ] 2. Weight [ ] 3. Size [ ] 4.Other…….

- *Do the exchange of gold activities execute using standard measurement/ weighing scale/?*

  1. Yes [ ] 2. No [ ]

- *If no, how much the problem is severe ?*

  1.extrimly severe [ ] 2. Very severe [ ] 3. not very severe [ ] 4. Not at all severe [ ]

  5. some what severe [ ]

- *How do you spent income from gold sales ?*

S.N	*purpose*	*Amount of gold*	*price*
1	*Family consumption*		
2.	*Agricultural production*		
3.	*Buying livestock*		
4.	*Construction of house*		
5.	*other*		

- *Have you made exchange of commodities directly by gold?*

  1.yes [ ] *2.No* [ ]

- *If yes ,What was the reason to make a sale ?*

  [ ] 1. *Immediate problem*

  [ ] 2. *I got the needed product*

  [ ] 3. *No easy access to make a change gold to birr*

  [ ] 4. *Currency preference /sudanise ,omla against Ethiopian Birr*

  [ ] 5.*other……..*

- *Do you get institutional support ?*

  1. yes [ ] *2. no* [ ]

  If yes, which organization do the support ?

  1. *Peasant association* [ ] *2 Mining and energy desk of wereda* [ ]

  3.Woreda administration [ ] *4. Regional mininig and energy bureau* [ ]

  5.Others……

- *What type of support have you got sofar?*

  1.training [ ] *2.techinical* [ ] *3 material* [ ] *4.financial* [ ] *5.others* [ ]

- *Do you have exposure about the proclamation concerning about mining production and mining tax?/No.52/1993/,No.53/1993/*

  1.Yes [ ] *2.No* [ ]

- *Do you have exposure about the proclamation concerning about transaction of precious minerals?/611/2001/*

1.Yes [ ] *2.No* [ ]

- *Proper utilization of resource ,legal control of market ,and to have public service are some of the advantage of being licensed?*

  1. strongly disagree [ ] 2. *disagree*[ ] 3. *neither agree*[ ]

  4.agree[ ] 5. *strongly agree*[ ]

- *Do you have license ?*

  1. Yes [ ] *2. No* [ ]

- *If no ,what are the problems to get license?*

  1 . I am far from the license provider [ ] *2. the amount of money to license is large* [ ] *3.renewal of license also difficult* [ ] *4.no difference between having a license or no license* [ ]

- *Have you ever try to make a ornaments or some other form which make value to your product?*

  1. Yes [ ]

  2. No [ ]

- *If no, what is the problem not to do it?*

  1.Technical knowledge [ ] *2. Technical skill* [ ] *3. Lack of tools* [ ]

  3. *Shortage of Finance* [ ] *5 . Others……*

- *If, there is a social and religious ceremony meet to you, the decision you made did give priority to ceremony rather than the price of gold you sale*

  1. *Strongly disagree [*] 2. *Disagree* [ ] 3.neither *agree* [ ] 4 .*agree* [ ] 5. *strongly agree*[ ]

- *Do you have cooperation among the miners to negotiation with buyers on marketing problems, especially, price?*

  1. *Yes* [ ] *2.No* [ ]
  2. *Do you have a Bank service of buying your product /gold/?*

     1. Yes [ ] *2.No* [ ]

THANK YOU FOR YOUR COOPRATION!!